

answers²

Operating Manual

CELSIUS M

English



FUJITSU COMPUTERS
SIEMENS

Are there ...

... any technical problems or other questions you need clarified?

Please contact:

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- your sales outlet

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CELSIUS M

Operating manual

Introduction

Important notes

Preparing for use

Operation

Troubleshooting
and tips

System expansions

Technical data

Index

July 2004 edition

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Contents

Your CELSIUS M.....	1
Notational conventions	2
Important notes	3
Safety notes	3
Energy saving, disposal and recycling	3
CE marking.....	4
FCC Class B Compliance Statement.....	4
Transporting the workstation.....	4
Cleaning the workstation.....	5
Preparing for use.....	7
Unpacking and checking the delivery.....	7
Steps for initial setup	7
Setting up the workstation	8
Connect the monitor, mouse and keyboard	8
Connecting the monitor.....	8
Connecting the mouse.....	10
Connecting a keyboard.....	10
Connecting the workstation to the mains voltage.....	11
Initial switch-on: Software will be installed	13
Switching on monitor and workstation.....	13
Installing the software	15
Connecting external devices.....	15
Connections on the workstation.....	16
Connecting external devices to the serial port.....	17
Connecting external devices to the parallel port.....	17
Connecting external devices to the USB ports	18
Operation	19
Switching the workstation on.....	19
Switching off the workstation	19
Indicators on the workstation	20
Keyboard.....	22
Important keys and key combinations.....	22
Working with floppy disks	24
Settings in BIOS Setup.....	25
Property and data protection.....	25
Mechanical casing lock.....	25
Anti-theft protection and lead-sealing.....	26
BIOS setup security functions.....	27
Access authorisation via SmartCard	27
Access protection with SystemLock (optional).....	27

Troubleshooting and tips	29
Installing new software	29
Power-on indicator remains unlit after you have switched on your device	29
The screen stays blank	30
No mouse pointer displayed on the screen	31
The floppy disk cannot be read or written	31
Time and/or date is not correct	32
Error messages on the screen	32
Restoring the hard disk contents	32
Tips	32
System expansions	33
Information about boards	33
Opening the casing	34
Closing the casing	35
Removing and installing the fan	36
Removing and installing the ventilation plate	37
Installing and removing a board	39
Installing a board	39
Removing a board	41
Low-Profile boards	43
Mounting slot adapter	43
Removing slot adapter	43
Installing and removing drives	44
Removing the front panel	44
Attaching the front panel	45
Installing an accessible drive	46
Removing an accessible drive	49
Changing the floppy disk drive	51
Installing or removing the hard disk drive	54
Replacing the SmartCard reader	58
Installing and removing front USB or USB audio ports	60
Extensions to the mainboard	68
Removing the power supply	68
Upgrading main memory	69
Replacing processor	69
Replacing lithium battery	69
Swinging the power supply in	70
Technical data	71
Index	73

Your CELSIUS M...

... is available with various configuration levels with different hardware and software. In addition, you can install accessible drives (e.g. DVD drive), hard disks and other boards.

This operating manual tells you how to put your workstation into operation and how to operate it in daily use. This description applies for all configuration levels. Depending on the configuration level chosen some of the hardware components described may not be available on your PC. Please observe the notes on your operating system.

Depending on the configuration selected, the operating system is preinstalled on your hard disk (e.g. Windows XP).

Your workstation has a number of security features to ensure that no unauthorised persons can access your data. The security functions in the *BIOS Setup* also allow you to protect your data by means of passwords. In addition, you can also mechanically lock your workstation. Systems with a SmartCard reader offer additional protection.

DeskUpdate allows you under some operating systems to easily and quickly install the latest drivers and operating system extensions with a few mouse clicks. *DeskUpdate* is contained on the "Drivers & Utilities" CD.

Additional information on this workstation is also contained in:

- in the "Getting Started" manual
- in the "Safety" manual
- in the "Ergonomics" manual
- in the operating manual for the monitor
- in the technical manual for the mainboard
- in the "BIOS Setup" manual
- in your operating system documentation
- in the information files (e.g. *.TXT, *.DOC, *.WRI, *.HLP)



You will find an electronic version of some of the listed manuals on the "User Documentation" or "Drivers & Utilities" CD.

You can access and view the required information using the *Acrobat Reader* program, which is also on the CD. If necessary, you can also make a print version of the manual.

Notational conventions

The meanings of the symbols and fonts used in this manual are as follows:



indicates information which is important for your health or for preventing physical damage.



indicates important information which is required to use the system properly.

► Text which follows this symbol describes activities that must be performed in the order shown.

Text in italics indicates commands or menu items.

"Quotation marks" indicate names of chapters or terms.

Important notes

In this chapter you will find information regarding safety which it is essential to take note of when working with your workstation.

Safety notes



Pay attention to the information provided in the "Safety" manual and in the following safety notes.

During installation and before operating the device, please observe the instructions on environmental conditions in the "Technical data" chapter as well as the instructions in the "Preparing for use" chapter.

You may only operate the device, if the rated voltage for the device is set to the local mains voltage. Check the rated voltage set for this device (see the "Preparing for use" chapter).

The main switch (if present) and the ON/OFF switch do not disconnect the workstation from the mains voltage. To completely disconnect the mains voltage, remove the power plug from the grounded mains outlet.

Remove the power plug before opening the device.

Replace the lithium battery on the mainboard in accordance with the instructions in the "System expansions - Replacing lithium battery" chapter.

Caution: components in the system can get very hot.

Energy saving, disposal and recycling

Further information can be found on the "User Documentation" or "Drivers & Utilities" CD provided with your computer.

CE marking



The shipped version of this device complies with the requirements of the EEC directives 89/336/EEC "Electromagnetic compatibility" and 73/23/EEC "Low voltage directive".

FCC Class B Compliance Statement

The following statement applies to the products covered in this manual, unless otherwise specified herein. The statement for other products will appear in the accompanying documentation.

NOTE:

This equipment has been tested and found to comply with the limits for a "Class B" digital device, pursuant to Part 15 of the FCC rules and meets all requirements of the Canadian Interference-Causing Equipment Standard ICES-003 for digital apparatus. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in strict accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Fujitsu Siemens Computers GmbH is not responsible for any radio or television interference caused by unauthorised modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Fujitsu Siemens Computers GmbH. The correction of interferences caused by such unauthorised modification, substitution or attachment will be the responsibility of the user.

The use of shielded I/O cables is required when connecting this equipment to any and all optional peripheral or host devices. Failure to do so may violate FCC and ICES rules.

Transporting the workstation



Transport all parts separately in their original packaging or in a packaging which protects them from knocks and jolts, to the new site. Do not unpack them until all transportation manoeuvres are completed.

Cleaning the workstation



Turn off all power and equipment switches and pull the power plug out of the grounded mains outlets.

The inside of the workstation casing may only be cleaned by authorised, specially trained personnel.

Do not use any cleaning agents that contain abrasives or may corrode plastic.

Ensure that no liquid enters the system.

In order to avoid overheating, ensure that the monitor and workstation ventilation outlets are not obstructed.

Wipe the casing with a dry cloth. If particularly dirty, use a cloth that has been moistened in mild domestic detergent and then carefully wrung out. Use disinfectant wipes to clean the keyboard and the mouse.

Preparing for use



Please take note of the safety information in the "Important notes" chapter.

Unpacking and checking the delivery

It is recommended not to throw away the original packaging material! It may be required for reshipment at some later date.

- ▶ Unpack all the individual parts.
- ▶ Check the delivery for damage incurred during transportation.
- ▶ Check whether the delivery agrees with the details in the delivery note.

Should you discover that the delivery does not correspond to the delivery note, notify your local sales outlet immediately.

Steps for initial setup

Only a few steps are necessary to put your new workstation into operation for the first time:

- Select location for workstation and set up workstation
- Connect the monitor, mouse and keyboard
- Check the voltage at the mains outlet and connect the workstation to an electrical outlet
- Switching the workstation on

You will learn more about the individual steps in the following sections.



External devices

If you have received other devices in addition to your workstation (e.g. a printer or a modem), do not connect these until after the initial installation. The following sections contain a description of how to connect these external devices: "Connecting external devices to the serial port" and "Connecting external devices to the parallel port".

Drives and boards

If you have received drives or boards with your Workstation, please do not install them until after initial installation. How to install drives and boards is described in the "System expansions" chapter.

Setting up the workstation



When installing your workstation, give consideration to the recommendations and safety notes in the "Safety" booklet.

Set up your workstation only in its correct orientation. The points to observe are illustrated on the following pages.

We recommend that you place your device on a surface with good anti-slip qualities. In view of the multitude of different finishes and varnishes used on furniture, it is possible that the rubber feet will mark the surface they stand on.

Do not expose the workstation to extreme environmental conditions (see "Technical data" chapter). Protect it from dust, humidity and heat.

Provide at least 200 mm of clearance in front of , to the left of, and behind the fan area of the casing to ensure adequate ventilation. In order to avoid overheating, do not cover the ventilation area of the monitor or the workstation.

Do not place several workstations one above the other.

Connect the monitor, mouse and keyboard

The monitor, mouse and keyboard ports are located at the back and the front (possible USB and audio interfaces) of the workstation.



Keyboard port / purple



PS/2 mouse port / green



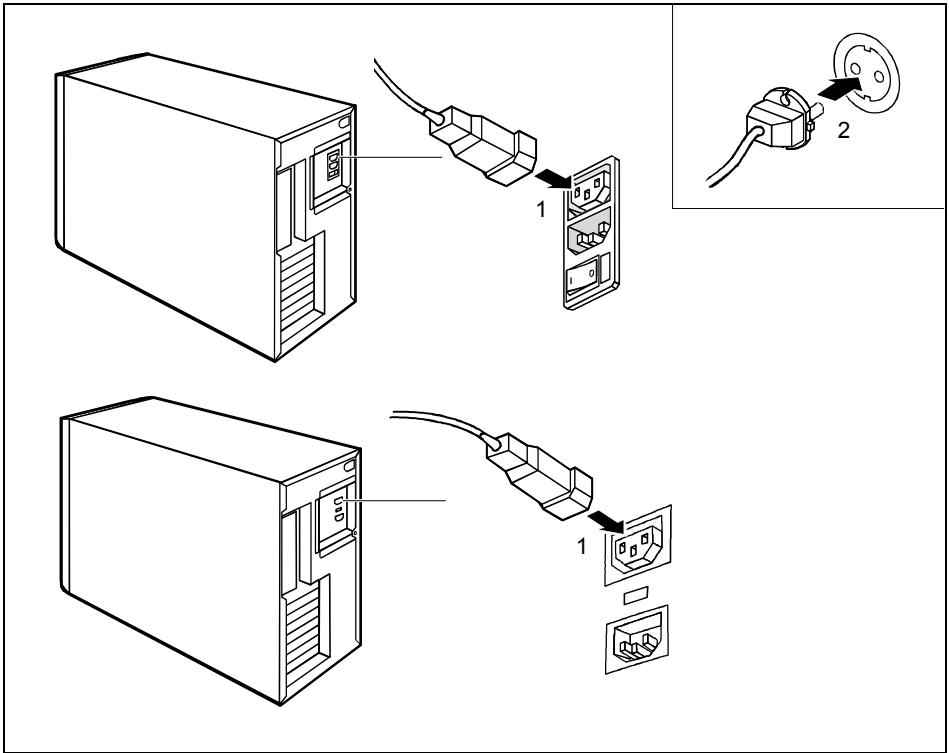
Monitor port / blue



USB port / black

Connecting the monitor

- ▶ Follow the instructions contained in the monitor manual to prepare the monitor for operation (e.g. connecting cables).
- ▶ Plug the data cable into the monitor port  of the workstation.



- Depending on the connector, plug the monitor power cable into either the monitor socket of the workstation (1) or the grounded mains outlet (2).



On units with a main power switch, we recommend that you connect the monitor to the monitor socket of the workstation if possible. The monitor is then switched off automatically when you switch the workstation off.

If the monitor is connected to a system without main switch it will not be switched off together with the system. Switch off the monitor with its own ON/OFF switch.



The monitor power cable may only be connected to the workstation monitor socket if the monitor current consumption is smaller than 1,5 A with 230 V or 3 A with 115 V. The values for the monitor current consumption can be found in the technical data on the monitor or in the operating manual for the monitor.

Connecting the mouse

Depending on the equipment level selected, your workstation will be supplied with a PS/2 mouse or a USB mouse.

Connecting a PS/2 mouse

- ▶ Connect the PS/2 mouse to the PS/2 mouse port  on the workstation.

Connecting USB mouse

- ▶ Connect the USB mouse to a USB port  on the workstation.



If you do not attach a mouse at the PS/2 mouse port, you can disable the mouse controller in the *BIOS Setup* in order to free the IRQ12 for a different application.

Connecting a keyboard

Depending on the selected equipment level, your workstation will be supplied with a standard keyboard or a USB keyboard.

Connecting standard keyboard

Use the supplied keyboard cable only.

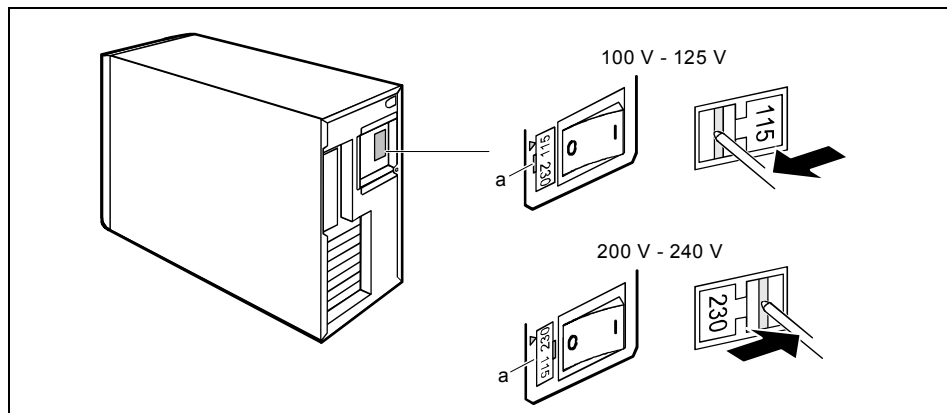
- ▶ Plug the other end of the keyboard cable (square plug) into the socket on the underside of the keyboard.
- ▶ Plug the round plug of the keyboard cable into the keyboard port  on the workstation.

Connecting USB keyboard

Use the supplied keyboard cable only.

- ▶ Plug the other end of the keyboard cable (square plug) into the socket on the underside of the keyboard.
- ▶ Insert the rectangular USB plug of the keyboard cable into a USB port  on the workstation.

Connecting the workstation to the mains voltage



a = Notch for inserting the screwdriver

- Check the voltage setting.



If you have a wide-range power supply, the appropriate voltage will be automatically selected.



Devices with main power switch:

Some units with a main power switch have a wide-range power supply, depending on the configuration level. This means that manual voltage setting is not necessary for these devices. Therefore there is no switch available for the voltage setting.

The following refers to the other devices:

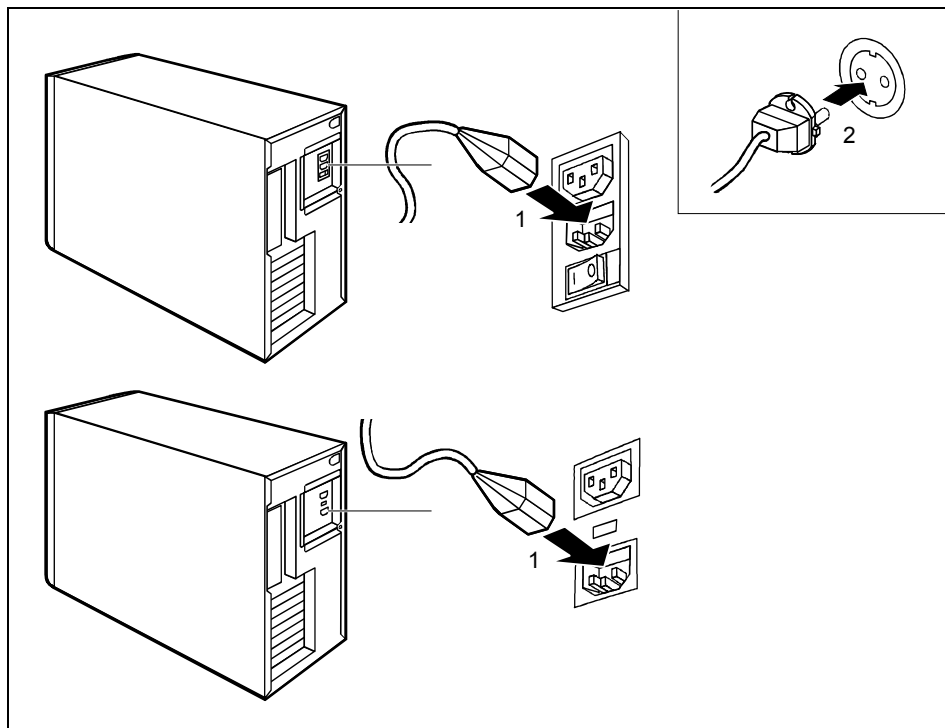
The value indicated with an arrow must be compatible with the local rated voltage:
 115 = 100 V to 127 V 230 = 200 V to 240 V

If the voltage setting is incorrect, then lift out the manual voltage adjuster with a screwdriver (1), turn it to the required setting and reinsert it.

Devices without main power switch:

The visible value must agree with the local mains voltage:
 115 = 100 V to 127 V 230 = 200 V to 240 V

If an incorrect mains voltage is set, push the slide switch all the way into the other possible position with a pointed object.



- ▶ Plug the power cable into the workstation (1).
- ▶ Plug the power plug into the grounded mains outlet (2).

Initial switch-on: Software will be installed

If the workstation is integrated into a network, the user and server details as well as the network protocol are required. Contact your network administrator if you have any questions about these settings.

When you switch on your workstation for the first time the supplied software is installed and configured. You should plan some time for this, as this process must not be interrupted.



Once the installation has been started the workstation must not be switched off!

During installation the workstation may only be rebooted when you are requested to do so!

Otherwise the installation will not be performed correctly. If a fault occurs during the installation, the contents of the hard disk must be completely restored.

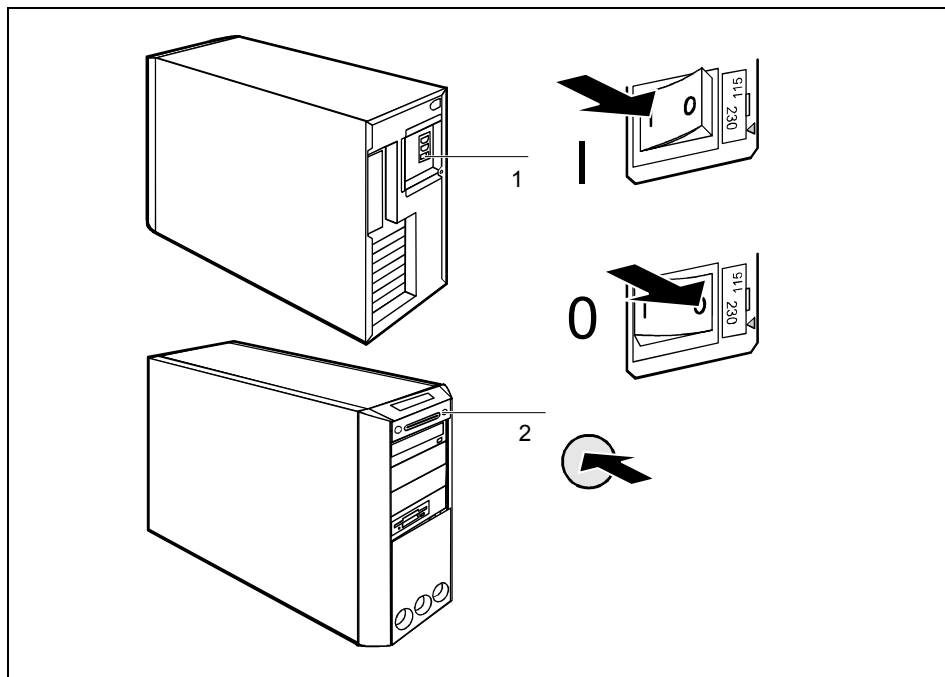
You may require the Windows licence number during installation. This number is located on a sticker on your workstation.

Switching on monitor and workstation

- ▶ Switch the monitor on (see the operating manual for the monitor).
- ▶ Switch on the workstation. To do this, follow the instructions below.



Depending on the version, your workstation is equipped with a main power switch on the back of the casing in addition to the power button on the front. This differentiates between the ways to switch on both workstation versions.



1 = Main power switch

2 = ON/OFF switch

0 = Workstation is switched off

I = Workstation is ready-to-operate

- Switch on the workstation with the main power switch on the back panel if present.
- Press the ON/OFF switch on the front of the workstation.

The corresponding indication then appears on the LCD or the relevant indicators light (see section "Indicators on the workstation").

Installing the software

- During installation, follow the instructions on screen.

Consult the operating system manual if there is anything unclear about the requested input data.



You will find further information about the system, drivers, utilities, updates, manuals etc. on the "Drivers & Utilities" CD supplied.

Connecting external devices



Read the documentation on the external device before connecting it. The power plug must be removed before connecting external devices, apart from USB devices.

Do not either connect or disconnect cables during storms.

Always take hold of the actual plug. Never unplug a cable by pulling the cable itself.

Connect and disconnect the cables in the order described below!

Connecting cables

- Turn off all power and equipment switches.
- Remove all power plugs from the mains outlets.
- Connect all cables at the workstation and peripherals. Under all circumstances, please observe the safety notes provided in the "Important notes" chapter.
- Plug all data communication cables into the utility sockets.
- Plug all power cables into the grounded mains outlets.

Disconnecting cables

- Turn off all power and equipment switches.
- Remove all power plugs from the mains outlets.
- Unplug all data communication cables from the utility sockets.
- Disconnect all cables from the workstation and peripherals.



USB devices are hot-pluggable. This allows cables from USB devices to be connected and disconnected with the system switched on.

Additional information can be found in the "Connecting external devices to the USB ports" section and in the documentation for the USB devices.

Connections on the workstation

The ports for external devices are on the rear and on the front of the workstation. The ports available on your workstation depend on the configuration level you have selected. The standard ports are marked with the symbols shown below (or similar). Exact details of the position of the ports are supplied in the technical manuals for the boards.



Keyboard port, purple



PS/2 mouse port, green



Serial port 1, teal or turquoise



Serial port 2, teal or turquoise



Monitor port, blue



Parallel port/Printer, burgundy



Headphones port, orange or light green



Microphone jack, pink or red



Audio output (Line out), light green



Audio input (Line in), light blue



Game port, gold



SCSI connection



USB - Universal Serial Bus, black



LAN connector



Some of the devices that you connect require special drivers (see the operating system and device documentation).

Connecting external devices to the serial port

External devices can be connected to the serial port (e.g. a modem).

- ▶ Connect the data cable to the external device.
- ▶ Connect the data cable to the serial port .

For an exact description of how to connect external devices to the serial port, please refer to the device documentation.



Settings of the serial port

If you need to change the settings of the serial port (e.g. address, interrupt), you can do so in the *BIOS Setup*. The settings for the port are described in the technical manual for the mainboard or in the "BIOS Setup" manual.

Device drivers

The devices connected to the serial port require drivers. Your operating system already includes many drivers. Nevertheless, if the driver you need is not on the hard disk, please install it from the data carrier supplied with the device or with the application programme.

Connecting external devices to the parallel port

External devices can be connected to the parallel port (e.g. a printer).

- ▶ Connect the data cable to the external device.
- ▶ Connect the data cable to the parallel port .

For an exact description of how to connect external devices to the parallel port, please see the device documentation.



Settings of the parallel port

If you need to change the settings of the parallel port (e.g. address, interrupt), you can do so in the *BIOS Setup*. The settings for the port are described in the technical manual for the mainboard or in the "BIOS Setup" manual.

Device drivers

The devices connected to the parallel port require drivers. Your operating system already includes many drivers. Nevertheless, if the driver you need is not on the hard disk, please install it from the data carrier supplied with the device or with the application programme.

Connecting external devices to the USB ports

You can connect a wide range of external devices to the USB port (e.g. printer, scanner, modem or keyboard).



USB devices are hot-pluggable. This allows cables from USB devices to be connected and disconnected with the system switched on.

Additional information can be found in the documentation for the USB devices.

- ▶ Connect the data cable to the external device.
- ▶ Connect the data cable to a USB port .



Device drivers

The devices you connect to the USB ports usually require no driver of their own, as the required software is already included in the operating system. However, if the USB device requires its own software, please install it from the data carrier provided with the USB device.

Operation

Switching the workstation on

- ▶ If necessary, switch the monitor on (see the operating manual for the monitor).
- ▶ Switch on the workstation with the main power switch on the rear of the workstation (if present).
- ▶ Press the ON/OFF switch on the front of the workstation.

The corresponding indication appears on the LCD (see section "Indicators on the workstation") or the operating indicator lights green, the workstation starts up.

Switching off the workstation

- ▶ Shut down the operating system properly. For Windows: select *Shut Down* from the *Start* menu.
- ▶ If the workstation operating system does not switch off automatically, use the ON/OFF switch to switch off the workstation when requested.

If the workstation is ready-to-use, the workstation consumes very little power.

Switch off the workstation at the main switch (if present). The workstation no longer uses any power.



The main switch and the ON/OFF switch do not disconnect the workstation from the mains voltage. To completely disconnect the mains voltage, remove the power plug from the socket.

- ▶ If necessary, switch the monitor off (see the operating manual for the monitor).

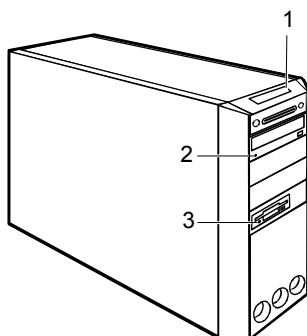
Placing a workstation (with soft power off function) in a ready-to-operate state by means of software

With the soft power off function the workstation automatically switches off (standby) or switches into the energy-saving mode after the operating system is shut down. Requirements: Your system must support switching off with software and this functionality must be enabled in *BIOS Setup*. The soft power off software may also need to be installed on Windows NT systems.

You can also switch your workstation into the standby mode via the *DeskView* software with the *DeskOff* programme.

Indicators on the workstation

The indicators are on the front of the workstation. Which indicators are available on your workstation depends on the configuration level you have selected.



1 = LCD

2 = CD-ROM indicator

3 = Floppy disk indicator

1 - LCD

The LCD lights up as soon as the workstation is switched on. Up to seven symbols are displayed, depending on the operating state.



Power on

appears on the LCD as soon as the workstation is switched on.



Standby/ Energy saving mode

appears on the LCD as soon as the workstation is in energy saving mode. The workstation can be switched on with the ON/OFF switch.



Hard disk

appears on the LCD as soon as the hard disk is accessed.



Error

appears on the LCD if there is a hardware error in the workstation or if a critical hardware state is reached (e.g. fan failure, high temperature). You can use DeskView to get detailed information on the problem that occurred. If in any doubt, consult your administrator.



LAN connection

appears on the LCD as soon as the workstation is connected to a LAN.

**LAN access**

appears on the LCD as soon as the workstation sends or receives data over the LAN.

**Message**

when software that supports this function is used, the appearance of this symbol on the display indicates that an incoming message (mail, fax) is waiting.

Appears on the LCD when an incoming message (mail, fax) is waiting. This symbol only appears if you use software that supports this function.

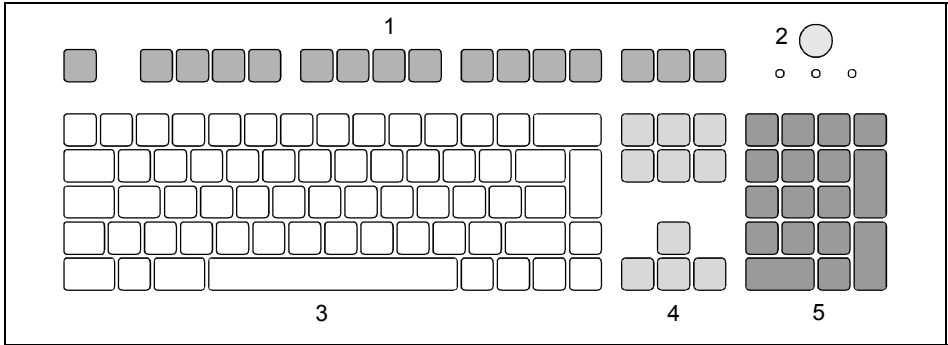
2 - CD-ROM indicator

The indicator lights up when the CD-ROM drive of the workstation is accessed. You may only remove the CD when the indicator is dark.

3 - Floppy disk indicator

The indicator lights up when the floppy disk drive of the workstation is accessed. You may only remove the floppy disk when the indicator is unlit.

Keyboard



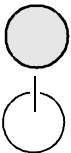
- 1 = Function keys
- 2 = Power button (optional)
- 3 = Alphanumeric keypad
- 4 = Cursor keys
- 5 = Numeric keypad (calculator keypad)



The illustrated keyboard is an example and may differ from the model you use.

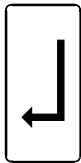
Important keys and key combinations

The following description of keys and key combinations refers to MS Windows. Details of other keys and key combinations can be found in the documentation of the relevant application programme.



ON/OFF switch (optional)
Depending on the setting in the *BIOS Setup*, the system can be switched on, off, or on and off with this button. Some operating systems allow you to configure additional functions of the ON/OFF switch in the Control Panel.

On some keyboards the ON/OFF switch can only be used with ACPI. Otherwise the key is inoperative. The mainboard must support this function.



Enter key
confirms the marked selection. The enter key is also referred to as the "Return" key.



Start key
calls up the Windows *Start* menu.



Menu key
invokes the menu for the marked item (Windows).



Shift key

enables upper-case letters and the upper key symbols to be used.



Alt Gr (e.g. German keyboard)

produces a character shown on the right-hand side of a key (e.g. the character @ on the key **Q**).

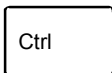


Num key

Switches the numeric key pad between the number ("Num" indicator lights up) and the editing modes ("Num" indicator does not light up).

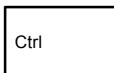
When the Num Lock indicator is lit the digit and comma keys are active.

When the Num Lock indicator is not lit the cursor control functions are active in the Numeric keypad.



Ctrl key

starts key combination actions. The **Ctrl** key is also called "Ctrl", "Control" or "Control key".



+



+



Warm boot

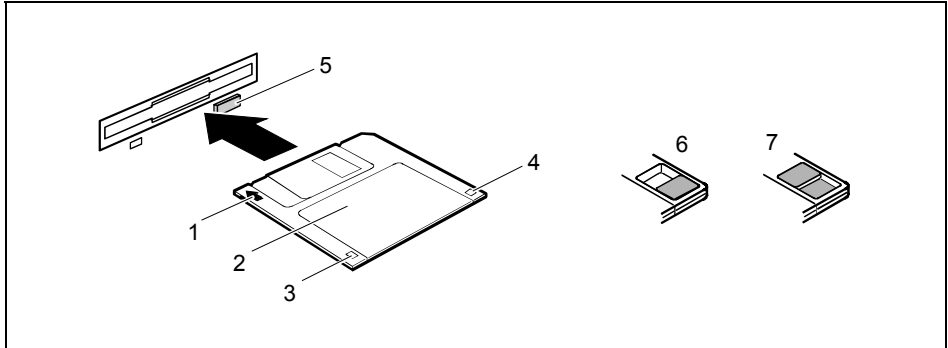
restarts the workstation. Press simultaneously the keys **Ctrl**, **Alt** + **Del**. Under some operating systems the Task Manager appears first. Then you must press all three keys again to re-boot.

Working with floppy disks



Follow the instructions supplied by the vendor of the floppy disks.

Never clean the floppy disk drives with cleaning disks. Any attempt would destroy the read/write head in the disk drive within 20 seconds.



1 = Insertion direction

2 = Label area

3 = Write protection tab for a 1.44 Mbyte floppy disk

4 = Identification of a 1.44 MB floppy disk or write protect switch on a 120 MB floppy disk

5 = Eject button for inserted floppy disks

6 = Disk is write-protected

7 = Disk is not write-protected

To insert a diskette

- Push the floppy disk into the drive in the insertion direction (1) until it engages. The label should be facing upward.

To remove a diskette

- Push the eject button (5).

Protect the floppy disk against being overwritten or erased

- Slide the write-protect slider into position (6). The hole is now visible.

Deactivate write protection

- Slide the write-protect slider into position (7). The hole is now covered.

Settings in BIOS Setup

The *BIOS Setup* menu allows you to set your hardware configuration and system functions of the workstation. When the PC is delivered, the default entries are valid (see "BIOS Setup" manual and if necessary technical manual for the mainboard). You may customise these settings to your requirements in the *BIOS Setup*.

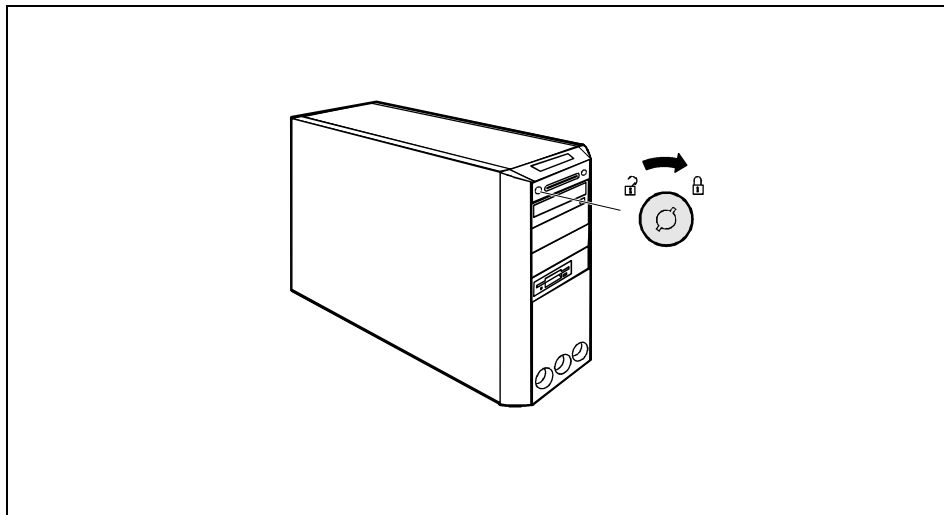
Property and data protection

Software functions and mechanical locking offer a broad range of functions for protecting your workstation and your personal data from unauthorised access. You can also combine these functions.

Mechanical casing lock

Depending on the configuration level, your casing will be supplied with or without a casing lock. With the casing lock you can mechanically lock the casing to prohibit unauthorised persons from opening it.

Locking the casing



- Turn the key clockwise.

Unlocking the casing

- Turn the key counterclockwise.

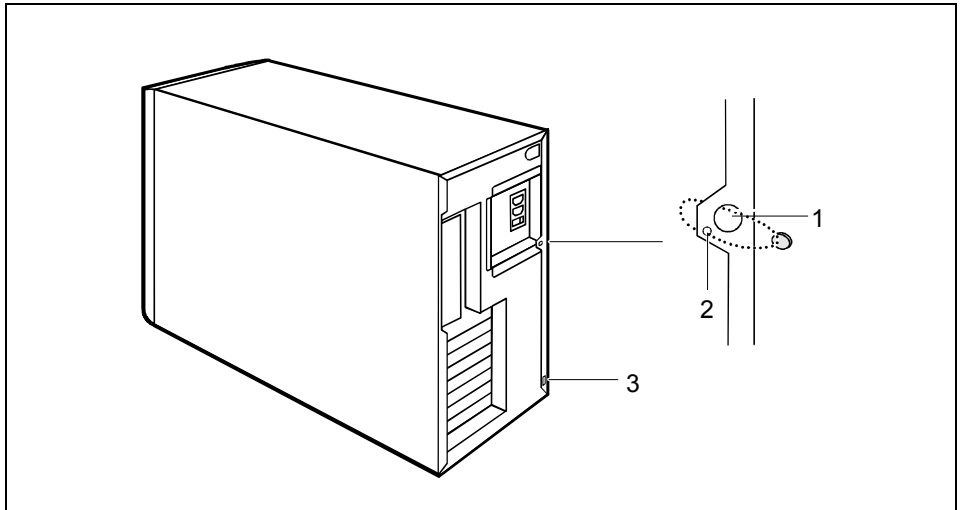
Anti-theft protection and lead-sealing

There are three ways to protect your workstation from theft:

- with the Kensington Lock device (3) and with a Kensington MicroSaver
- with a chain (lead-seal)
- with a (pad)lock

To prevent unauthorised persons from opening the casing, the casing can be sealed. To do this, feed the sealing chain through the large eye (1) and the small eye (2) and seal the chain with the lead seal.

You can also attach a padlock to the large eye (1) to prevent unauthorised opening of the casing. You can also use this eye to anchor the casing if necessary.



- 1 = Large eye
2 = Small eye
3 = Device for "Kensington Lock"

BIOS setup security functions

The *Security* menu in *BIOS Setup* offers you various options for protecting your personal data against unauthorised access, e.g.:

- Preventing unauthorised BIOS Setup entry
- Preventing unauthorised system access
- Preventing unauthorised access to the settings of boards with their own BIOS
- Preventing system booting from the diskette drive
- Activating virus warnings
- Preventing unauthorised writing of diskettes
- Protecting BIOS from being overwritten
- Protecting the workstation from being switched on by an external device

You can also combine these functions.

You will find a detailed description of the *Security* menus and how to assign passwords in the technical manual for the mainboard or in the "BIOS Setup" manual.

Access authorisation via SmartCard

In systems equipped with a SmartCard reader, access can be restricted to those users who have a corresponding SmartCard.

Access protection with SystemLock (optional)

With *SystemLock* you can protect your system from unauthorised booting. Then a system can only be booted when the user inserts a valid SmartCard in the SmartCard reader and enters his/her personal code number (PIN). To use *SystemLock* you require the following components:

- External or internal SmartCard reader
- SystemLock installed (see "BIOS Setup" manual)
- SmartCard

SystemLock controls access to your workstation. When a SmartCard is initialised, permissions are assigned for system access (system, setup, system+setup, admin). You can configure several SmartCards for one system and initialise them with different permissions. In addition you can protect access to your hard disk.

In this way users can be divided into user groups. Users of a user group use SmartCards with the same permissions.

More information on SystemLock



If you also want to use other security software in addition to *SystemLock* (e.g. *SMARTY*), please read the documentation on your security software beforehand.

SystemLock permissions

You can initialise a SmartCard with one of the following permissions:

System	The system starts following entry of the user PIN. You can change the user PIN.
Setup	You can open and change the <i>BIOS Setup</i> and change the user PIN.
System+Setup	The system starts following entry of the user PIN. You can open and change the <i>BIOS Setup</i> and change the user PIN.
Admin	The system starts following entry of the user PIN. You can change the user PIN an the administrator PIN, unlock locked SmartCards, open and change the <i>BIOS Setup</i> and generate additional SmartCards for this system.

For instructions on how to install and operate *SystemLock*, and how to initialise SmartCards, see the "BIOS Setup" manual.

Operating the SmartCard reader

- Operating the internal SmartCard reader

Depending on the configuration level, the workstation can be switched on by inserting your SmartCard. If the SmartCard reader has been released, the SmartCard reader indicator on the front of the workstation flashes green.

- Operating the external SmartCard reader

After the workstation is switched on, you will be prompted to insert your SmartCard.

Troubleshooting and tips



Take note of the safety notes in the "Safety" manual and in the "Preparing for use" chapter, when you connect or disconnect cables.

If a fault occurs, try to correct it as described in the following places:

- in this chapter
- in the documentation of the connected devices
- in the help systems of the software used
- in the documentation of your operating system

If you fail to correct the problem, proceed as follows:

- ▶ Switch off the workstation.
- ▶ Make a note of the steps and the circumstances that led to the fault.
- ▶ Make a note of any error messages displayed.
- ▶ Note the ID number of your device. This number can be found on the type rating plate on the back of the casing.
- ▶ Contact your sales outlet or our customer service centre.

Installing new software

When installing programmes or drivers, important files may be overwritten and modified. To be able to access the original data in the event of any problems following installation, you should backup your hard disk prior to installation.

Power-on indicator remains unlit after you have switched on your device

This may be due to the following:

The mains voltage supply is faulty

- ▶ Check that the power cable is plugged properly into the workstation and grounded mains outlet.
- ▶ Switch on the workstation.

Internal power supply overloaded

- ▶ Disconnect the power plug of the workstation from the grounded mains outlet.
- ▶ Wait for a moment.
- ▶ Plug the power plug into the grounded mains outlet again.
- ▶ Switch on the workstation.

The screen stays blank

If your screen remains blank this may be due to the following:

Monitor is switched off

- ▶ Switch your monitor on.

Power saving has been activated (screen is blank)

- ▶ Press any key on the keyboard.

or

- ▶ Deactivate the screen saver. Enter the appropriate password.

Brightness control is set to dark

- ▶ Adjust the brightness control. For detailed information, please refer to the operating manual supplied with your monitor.

Power cable not connected

- ▶ Switch off the monitor and the workstation.
- ▶ Check that the power cable of the monitor is properly connected to the monitor and, depending on the connector, to the workstation or to the grounded mains outlet.
- ▶ Check that the power cable of the workstation is plugged properly into the workstation and grounded mains outlet.
- ▶ Switch on the monitor and the workstation.

Monitor cable not connected

- ▶ Switch off the monitor and the workstation.
- ▶ Check that the monitor cable is properly connected to the workstation and monitor.
- ▶ Switch on the monitor and the workstation.

Wrong monitor has been set under Windows 2000

- ▶ Restart the workstation.
- ▶ If the message *Starting Windows* appears, press function key **F8**

The *Windows 2000 Advanced Options Menu* appears.

- ▶ Select *Safe Mode* or *Safe Mode with Network*.
- ▶ Set the correct values for the attached monitor as described in the operating manual of the monitor by selecting *Start - Settings - Control Panel - Display - Settings*.

Wrong monitor has been set under Window XP

- ▶ Restart the workstation.
- ▶ Press **F8** while the system is booting.

Either the *Windows Advanced Start Options* menu or the menu for selecting the operating system appears.

- ▶ If the menu for selecting the operating system appears, press **F8**.
- ▶ Select *Safe Mode* or *Safe Mode with Network*.
- ▶ Set the correct values for the attached monitor as described in the operating manual of the monitor by selecting *Start - Settings - Control Panel - Display* and then the *Appearance, Themes, Settings* tabs.

The wrong RAM modules have been inserted

See the technical manual for the mainboard for information on which memory modules can be used.

No mouse pointer displayed on the screen

- ▶ Shut down the operating system properly.
- ▶ Switch off the workstation.
- ▶ Check that the mouse cable is properly connected to the system unit.
If you use an adapter or extension lead with the mouse cable, check the connections.
- ▶ Make sure that only one mouse is connected.
- ▶ Switch on the workstation.

The mouse controller must be enabled if you use a PS/2 mouse on the PS/2 mouse port .

- ▶ Check in the *BIOS Setup* that the mouse controller is *Enabled*.
- ▶ Check that the mouse driver is properly installed and is present when the application programme is started. Detailed information can be found in the user guide for the mouse and application programme.

The floppy disk cannot be read or written

- ▶ Check that the write protection of the floppy disk or the floppy disk drive is activated (refer to the "BIOS Setup" manual and if necessary to the technical manual for the mainboard).
- ▶ Check the entry for *Diskette A:* in the *Main* menu of the *BIOS Setup*.
- ▶ Check that the floppy disk drive controller is enabled (also refer to the technical manual for the mainboard or to the "BIOS Setup" manual).
- ▶ Check that the cables of the floppy disk drive are properly connected (refer to "System expansions" chapter).

Time and/or date is not correct

You can set the time and date in the *BIOS Setup* or in the operating system.

- ▶ Set the time and date.



If the time and date are repeatedly wrong when you switch on your PC, the on-board battery is flat. Change the lithium battery as described in the "System expansions " chapter, "Replacing lithium battery " section.

Error messages on the screen

Error messages and their explanation are contained:

- in the technical manual for the mainboard
- in the "BIOS Setup" manual
- in the documentation for the programmes used

Restoring the hard disk contents

Should you need to restore your hard disk, the instructions are provided on the case of the "Recovery CD" (delivered with your system).

Tips

The workstation cannot be switched off with the ON/OFF switch

Cause: The workstation has not been switched on with the ON/OFF switch.

- ▶ Press the ON/OFF switch again.

Cause: System crash

- ▶ Press and hold the power button for at least four seconds until the workstation switches off.

Out of system resources

If you have too many applications running at once, you may experience problems due to a lack of system resources. In this case you should:

- ▶ close unnecessary applications

or

- ▶ run the applications in a different order

Other manuals

Other manuals are contained on the "User Documentation" or "Drivers & Utilities" CD.

System expansions



As the PC has to be shut down in order to install/deinstall system hardware components, it is a good idea to print out the relevant sections of this chapter.

It may be necessary to update the BIOS when carrying out a system expansion or hardware upgrade. Additional information is contained in the "BIOS Setup" manual or possibly in the technical manual for the mainboard.

When installing components that become very hot, make sure that the maximum permissible temperatures of the individual components are not exceeded.

The workstation must be switched off when installing/removing the system expansions and may not be in the energy-saving mode.

Remove the power plug before opening the workstation.

This chapter describes all the activities required to modify your workstation hardware (e.g. installing boards or drives).

Read the supplied documentation before installing new drives and/or boards.

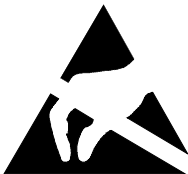
Refer to the technical manual for the mainboard before making any extensions to the mainboard.

Information about boards

Take care with the locking mechanisms (catches and centring pins) when you are replacing boards or components on boards.

To prevent damage to the board or the components and conductors on it, please take care when you insert or remove boards. Make sure expansion boards are inserted straightly.

Never use sharp objects (screwdrivers) for leverage.



Boards with electrostatic sensitive devices (ESD) are identifiable by the label shown.

When you handle boards fitted with ESDs, you must, under all circumstances, observe the following points:

- You must statically discharge yourself before working with boards (e.g. by touching a grounded object).
- The equipment and tools you use must be free of static charges.
- Pull out the power plug before inserting or removing boards.
- Always hold boards with ESDs by their edges.
- Never touch pins or conductors on boards fitted with ESDs.

Opening the casing

- ▶ Switch off the workstation. The workstation must not be in the energy-saving mode.

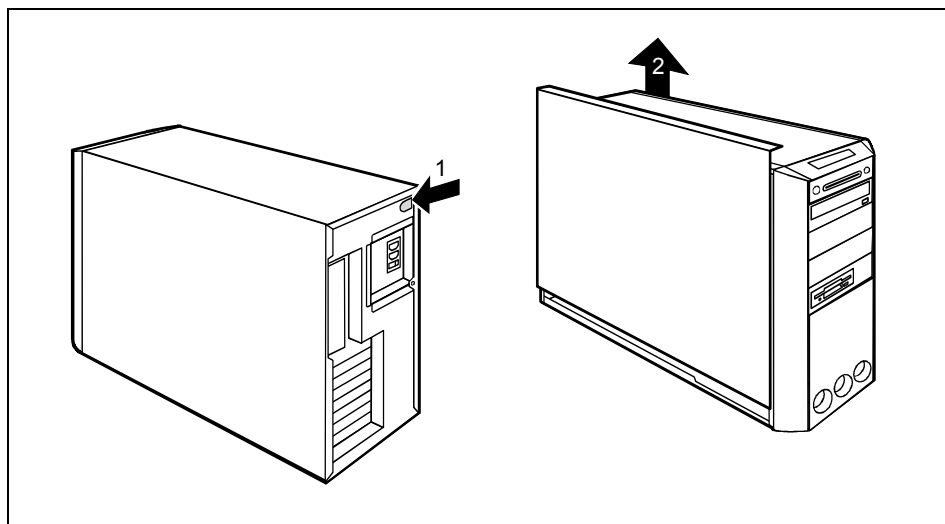


Please take note of the safety information in the "Important notes" chapter.

Pull the power plug out of the mains outlet.

Only insert the power plug after you have closed the casing.

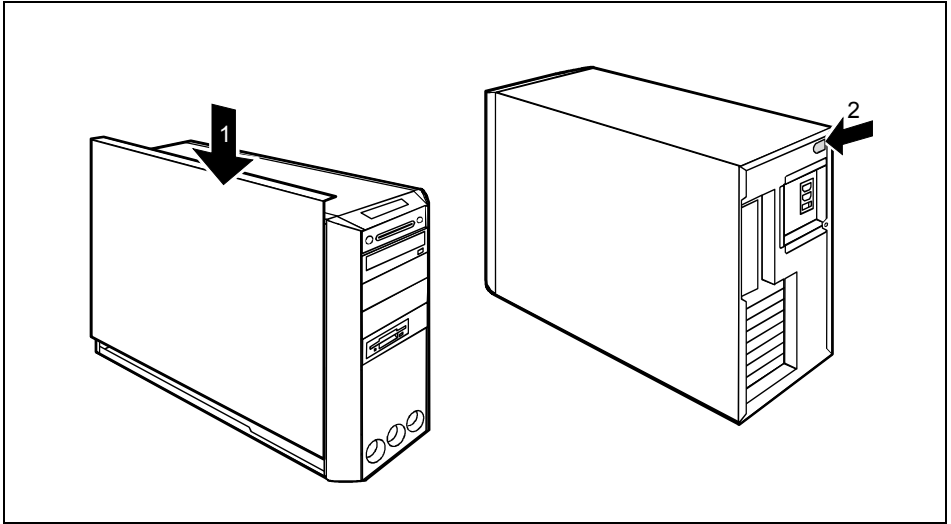
- ▶ Remove any connected cables in the unit that obstruct you.
- ▶ Place the device in a convenient working position.



Depending on the configuration level, your workstation will be supplied with or without a casing lock.

- ▶ If necessary, unlock the casing.
- ▶ Press the green unlocking button on the rear of the casing (1).
- ▶ Hold the green unlocking button depressed and slide the casing side cover upwards in the direction of the arrow (2).
- ▶ Pull the side cover out of the casing.

Closing the casing



Depending on the configuration level, your workstation will be supplied with or without a casing lock.

- ▶ Push the side cover from above in the direction of the arrow (1) until it engages.
- ▶ Lock the casing again if necessary.
- ▶ Return the system unit to its original position.
- ▶ Reconnect any disconnected cables (power cord, cables to external devices, etc.).

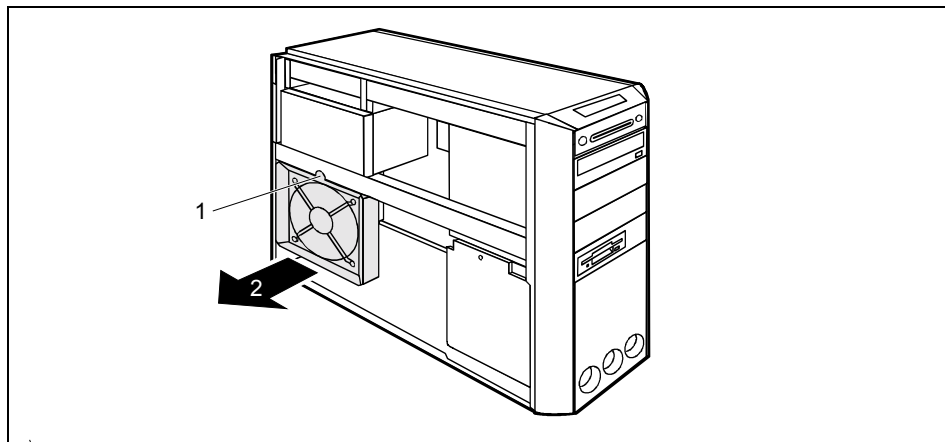
Removing and installing the fan



Your workstation may or may not have a fan, depending on the configuration.

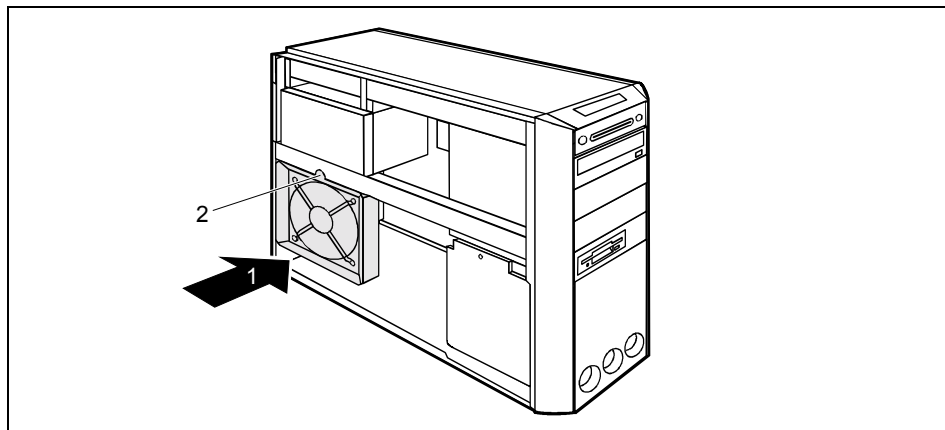
The fan must be removed whenever you install a board or upgrade the main memory.

Remove the fan



- Open the casing (see "Opening the casing" section).
- Loosen the screw (1).
- Remove the fan in the direction of the arrow (2).

Installing the fan



- Slide the fan into the guide rails in the direction of the arrow (1).

- ▶ Fasten the fan with the screw (2).
- ▶ Close the casing (see "Closing the casing" section).

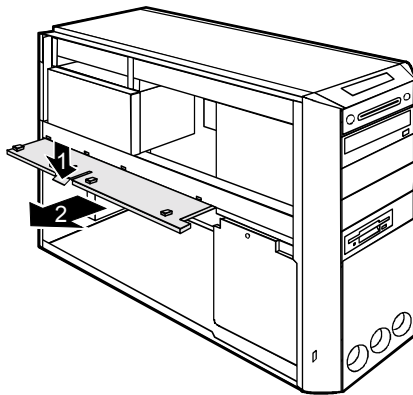
Removing and installing the ventilation plate



Your workstation may or may not have a ventilation plate, depending on the configuration.

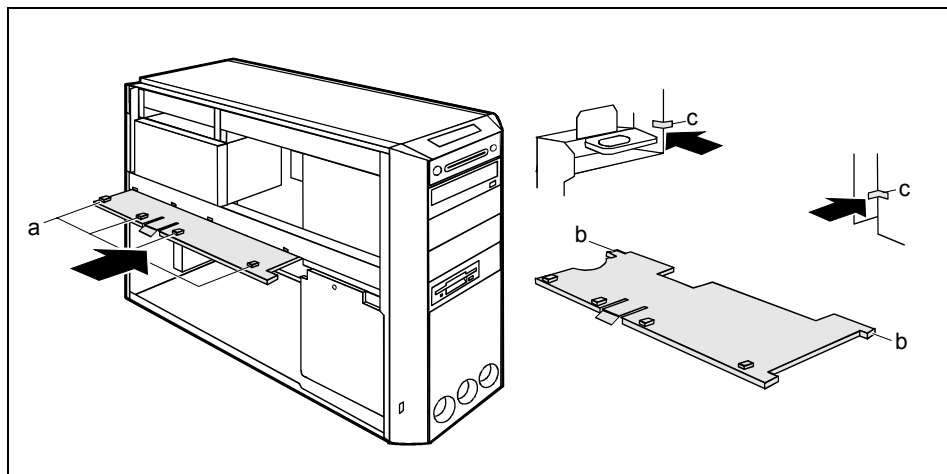
The ventilation plate must be removed whenever you install the processor or upgrade the main memory.

Removing the ventilation plate



- ▶ Press down the tab (1).
- ▶ Pull the ventilation plate out of the casing (2).

Installing the ventilation plate



- ▶ Slide the ventilation plate with the guide lugs on the upper side (a) into the casing.
- ▶ Slide the side catches (b) into the designated recesses (b).
- ▶ Close the casing (see "Closing the casing" section).

Installing and removing a board



Please take note of the section "Information about boards".

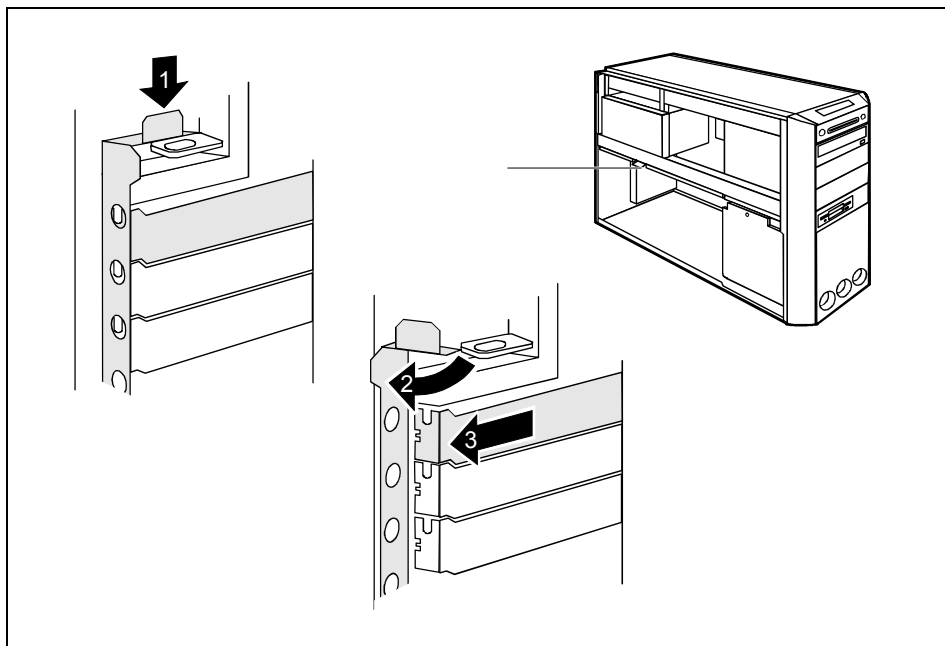
The number, position and arrangement of the board slots on the mainboard can be found in the technical manual for the mainboard. Boards may already be installed when the device is shipped.

Installing a board

- Open the casing (see "Opening the casing" section).

For workstations with a fan only:

- Remove the fan (see "Remove the fan").



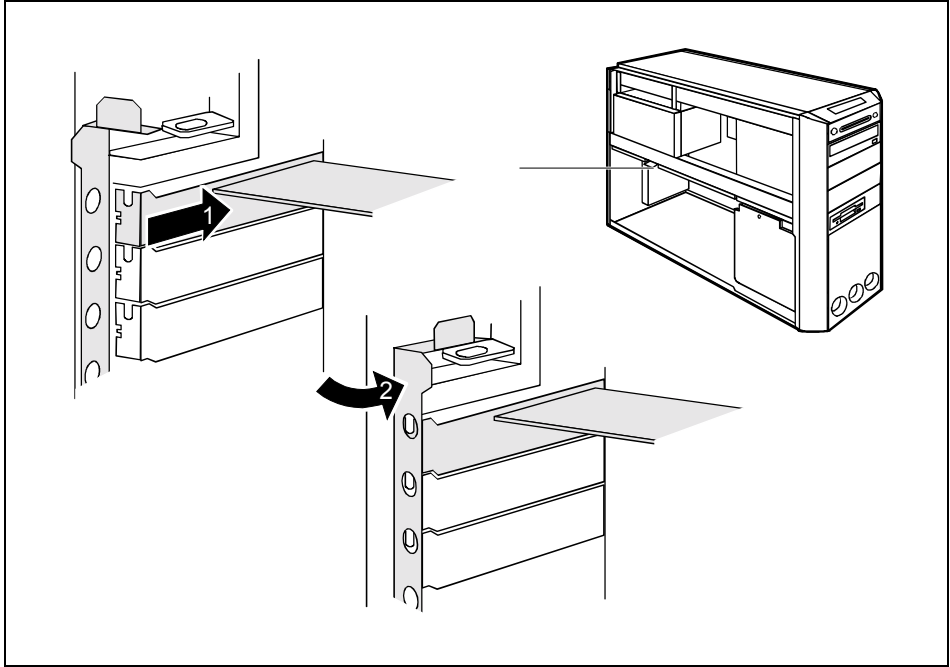
- Press the unlocking mechanism (1) down and open the locking rail (2). The word "PRESS" is embossed on the unlocking mechanism.
- Remove the slot cover from the slot (3).



Do not dispose of the slot cover. For cooling, protection against fire and in order to comply with EMC regulations, you must refit the slot cover if you remove the board.

- Take the new board out of its packaging.

- Make the required settings for the board.



- Push the board up to its slot (1).
- Press the board into the slot so that it engages.
- If necessary, connect the cables.
- Close the locking rail (2) and press on the locking mechanism in the direction of the arrow. The word "PUSH" is embossed on the locking mechanism.

For workstations with a fan only:

- Install the fan (see "Installing the fan").
- Close the casing (see "Closing the casing" section).



If you have installed or removed a PCI board, please check the relevant PCI slot settings in the *BIOS Setup*. If necessary, change the settings. Further information is provided in the PCI board documentation.

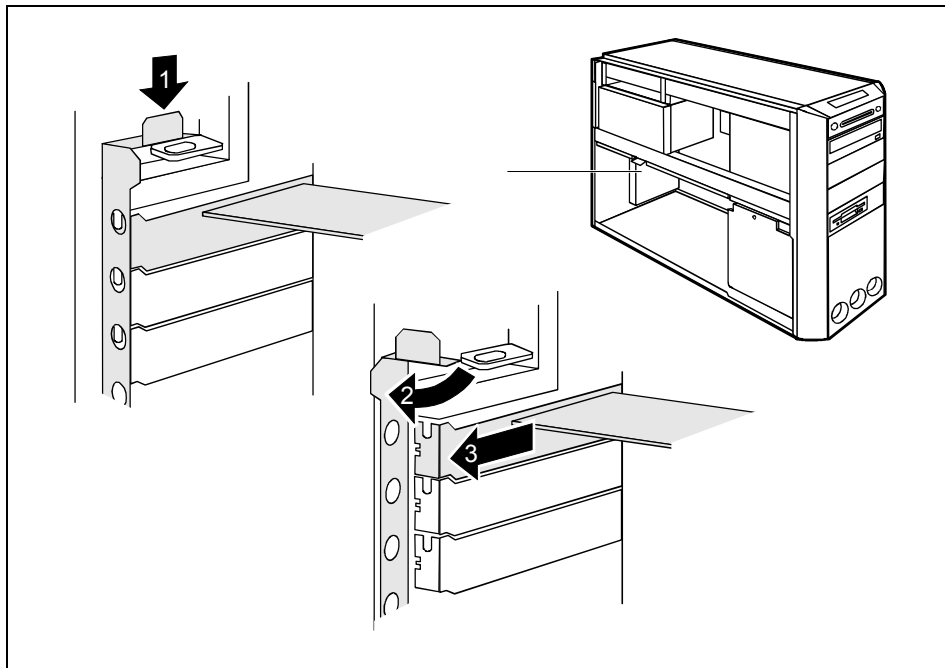
The slots 1, 3, 5 and 7 are suitable for low-profile cards with an adapter. The slots are counted from the bottom to the top.

Removing a board

- Open the casing (see "Opening the casing" section).

For workstations with a fan only:

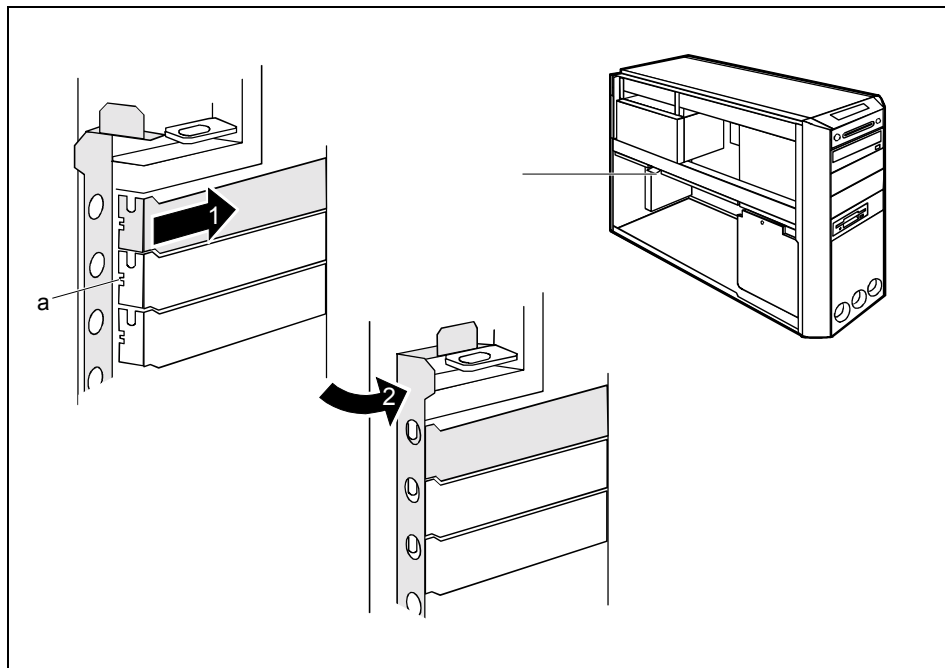
- Remove the fan (see "Remove the fan").
- Disconnect the cables connected to the board.



- Press the unlocking mechanism (1) down and open the locking rail (2). The word "PRESS" is embossed on the unlocking mechanism.
- Pull the board out of the slot (3).
- Place the board into appropriate packaging.



For cooling, protection against fire, and in order to comply with EMC (electromagnetic compatibility) regulations, you must refit the slot cover.



- Push the slot cover into the slot (1).



Ensure that the projection (a) on the slot cover engages into the appropriate recess. If it does not, you will find it difficult to close the locking rail. There is a danger of damage.

- Close the locking rail (2) and press on the locking mechanism in the direction of the arrow. The word "PUSH" is embossed on the locking mechanism.

For workstations with a fan only:

- Install the fan (see "Installing the fan").
- Close the casing (see "Closing the casing" section).



If you have installed or removed a PCI board, please check the relevant PCI slot settings in the *BIOS Setup*. If necessary, change the settings. Further information is provided in the PCI board documentation.

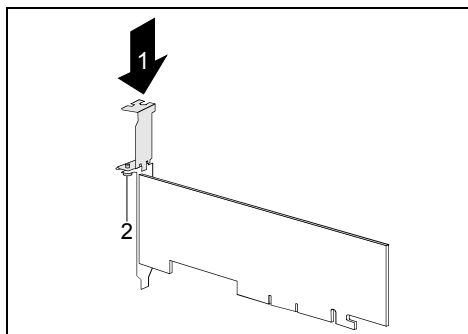
Low-Profile boards

For units with a particularly low overall height, there are so-called low-profile boards with a slot cover with a lower overall height to match the low-profile units. To also install these low-profile boards in normal board slots, you must mount a corresponding slot adapter beforehand.

Two-piece rear covers are fitted into the slots intended for low-profile boards. The two pieces are connected together with a screw.

- Remove the desired rear cover and then remove the screw.

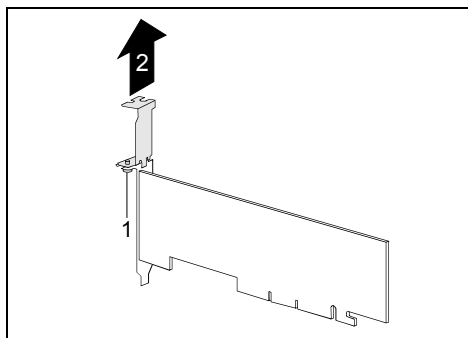
Mounting slot adapter



- Fit the slot adapter on the slot cover of the low-profile board (1) and screw it on (2).

Now you can install the low-profile board in a suitable slot like a normal board (see the "Installing a board" section).

Removing slot adapter



- Unscrew the screw (1) and remove the slot adapter (2).

Installing and removing drives

The PC casing can accommodate a total of eight drives:

- four accessible drives
(three 5¼" drives and one 3½" drive)
- four non-accessible drives
(3½" drives)

"Accessible drives" are e.g. DVD or CD ROM drives, into which a data carrier can be inserted from outside. Non-accessible drives are e.g. hard disk drives.

IDE drives

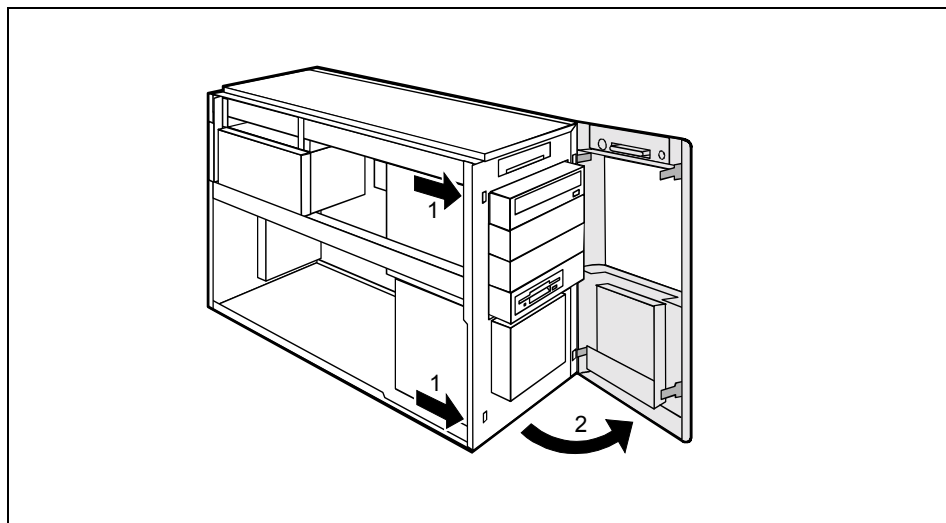
Four IDE drives are supported as standard equipment. Ideally, hard disks are connected to IDE interface 1 and other drives to IDE interface 2 (see also the technical manual for the mainboard).

SCSI drives

If you want to install a SCSI drive, you require a SCSI controller and a SCSI cable. Details are provided in the manuals on the SCSI controller

Removing the front panel

- ▶ Open the casing (see "Opening the casing" section).
- ▶ Detach the unlocking lever (1) and open the front panel (2).



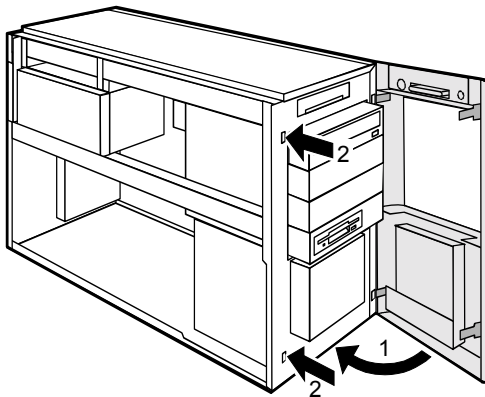
- ▶ Detach the plastic hook on the front panel of the casing and carefully remove the front panel. If you pull too hard, you may loosen or damage the LCD cable.

i

In a system with an LCD, the cable is long enough so that you can carefully place it to one side with the front panel. You do not need to unplug the cable before removing the front panel.

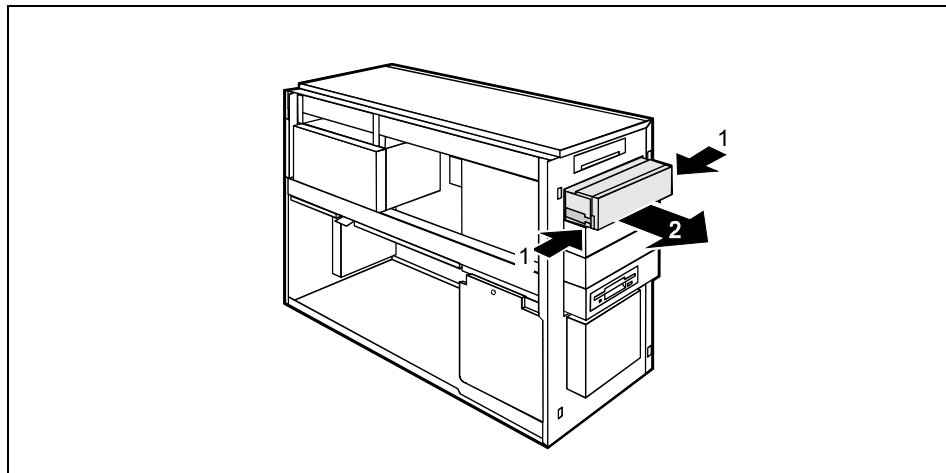
Attaching the front panel

- ▶ Engage the locking mechanism on the right of the casing. Attach the front panel on the casing such that the plastic hooks engage into the correct recesses.
- ▶ Close the front panel (1) and make sure that the LCD cable is not pinched and that the locking mechanisms engage noticeably (2).

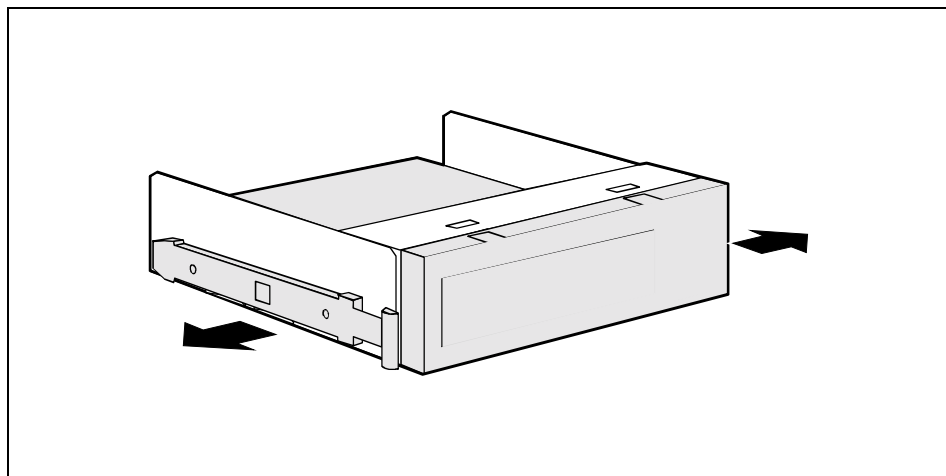


Installing an accessible drive

- ▶ Open the casing (see "Opening the casing" section).
- ▶ Remove the front (see "Removing the front panel" section).



- ▶ Press the EasyChange rails (1) together and pull the empty slide-in module out of the casing (2).



- Pull the EasyChange rails off the empty slide-in module.

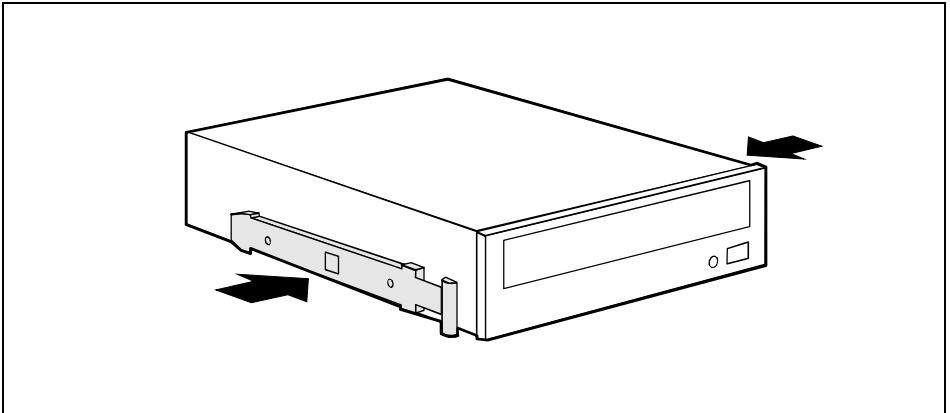


Do not dispose of the empty slide-in module. For cooling, protection against fire, and in order to comply with EMC regulations, you must refit the empty slide-in module if you remove the drive again later.

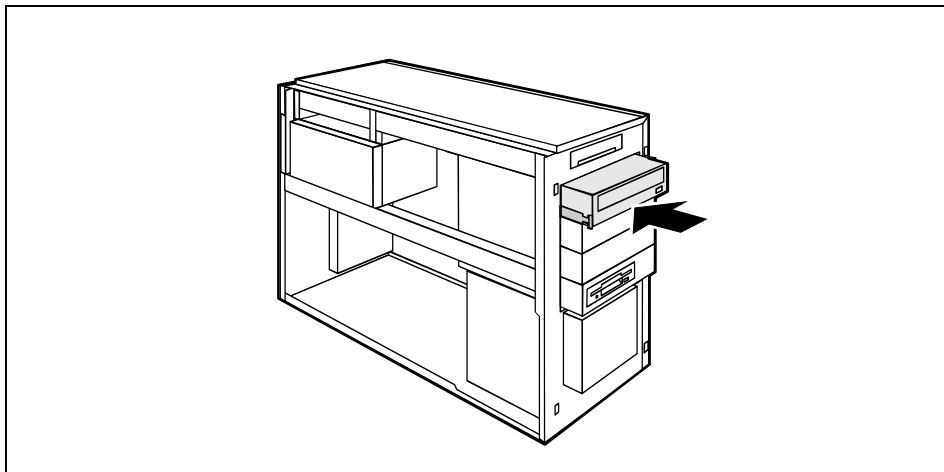


Do not dispose of the empty slide-in module. For cooling, protection against fire, and in order to comply with EMC regulations, you must refit the empty slide-in module if you remove the drive again later.

- Take the new drive out of its packaging.
- Adjust the required settings on the drive (if necessary, on already-installed drives as well).



- ▶ Press the EasyChange rails into the provided holes.



- ▶ Push the accessible drive into the casing (1) until the EasyChange rails engage.
- ▶ Plug the data and the power supply connectors into the drive. Make sure the polarity is correct.
- ▶ Attach the front panel (see "Attaching the front panel" section).
- ▶ Close the casing (see "Closing the casing" section).



With the upper three accessible drives, the EasyChange rail is attached at the bottom of the module.

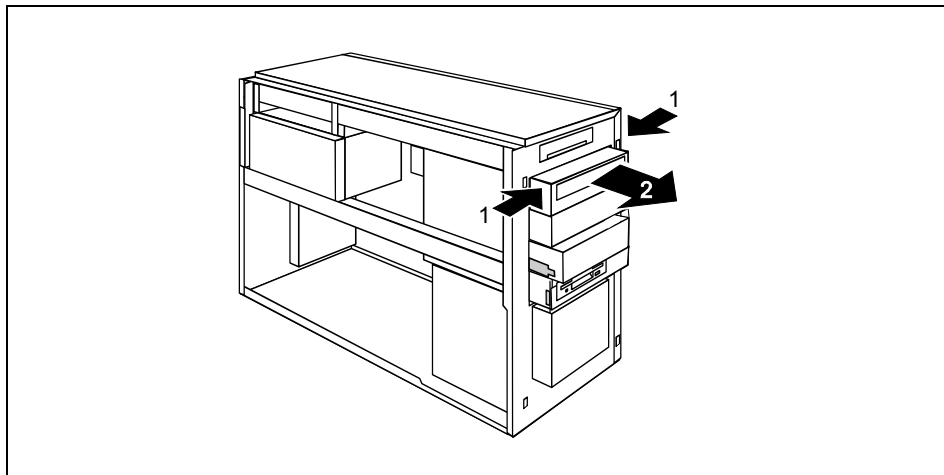
The rail is attached at the center of the module on the lowest drive.

All rails are mounted correctly on delivery.

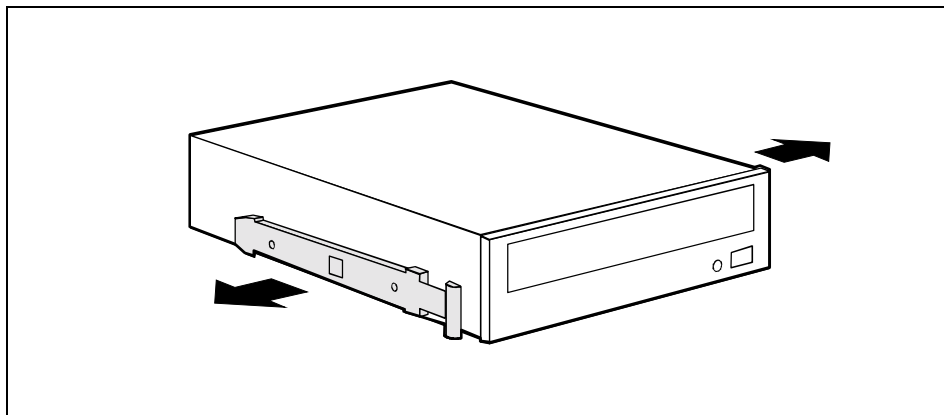
It may be necessary to modify the entry for the drive in the *BIOS Setup*.

Removing an accessible drive

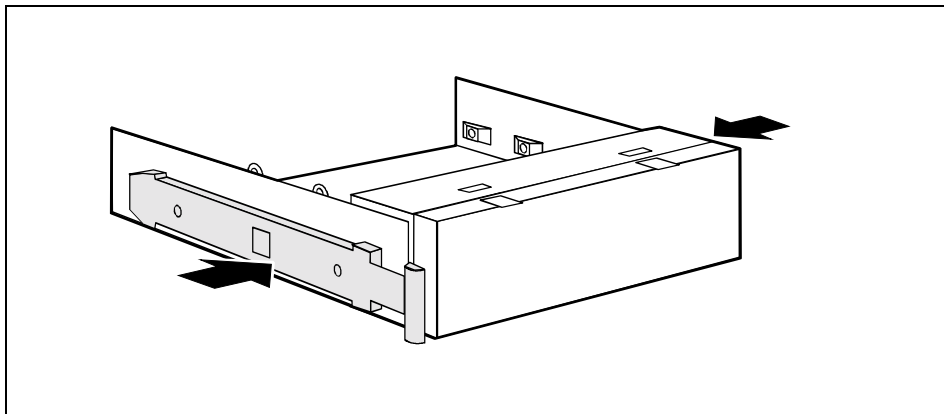
- ▶ Open the casing (see "Opening the casing" section).
- ▶ Remove the front (see "Removing the front panel" section).



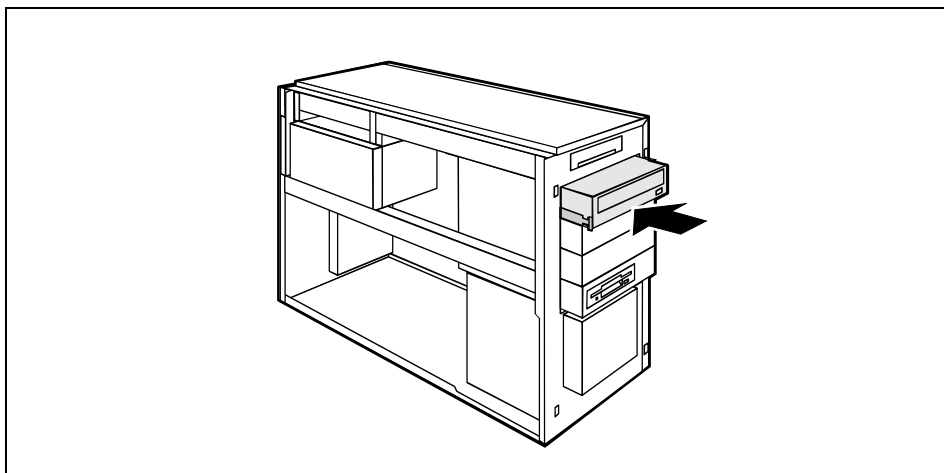
- ▶ Pull the data and the power supply connectors from the desired drive.
- ▶ Press the EasyChange rails together (1) and pull the drive out of the casing (2).
- ▶ If necessary, make the required settings on the remaining hard disk drive.



- Pull the EasyChange rails off the drive.



- Press the EasyChange rails into the holes provided in the empty slide-in module.



- Slide the slide-in module into the casing until it engages noticeably.
- Attach the front panel (see "Attaching the front panel" section).
- Close the casing (see "Closing the casing" section).

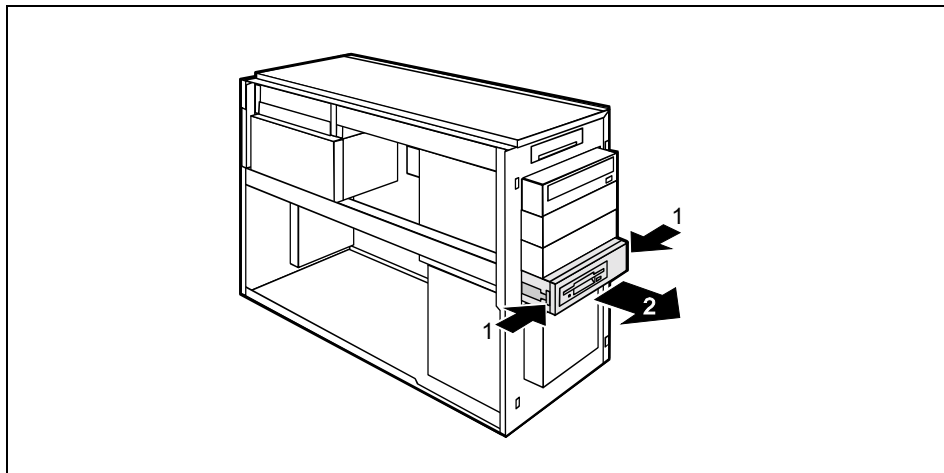


It may be necessary to modify the entry for the remaining drives in the *BIOS Setup*.

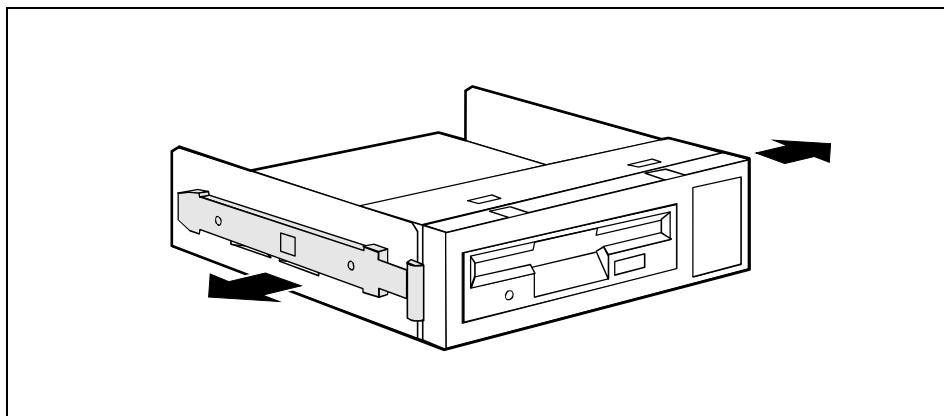
Changing the floppy disk drive

- ▶ Open the casing (see "Opening the casing" section).
- ▶ Remove the front panel (see "Removing the front panel" section).
- ▶ Disconnect the cables connected to the floppy disk drive.
- ▶ If it is present, pull the cable of the front USB or USB-audio interface from the mainboard (see also the technical manual for the mainboard).

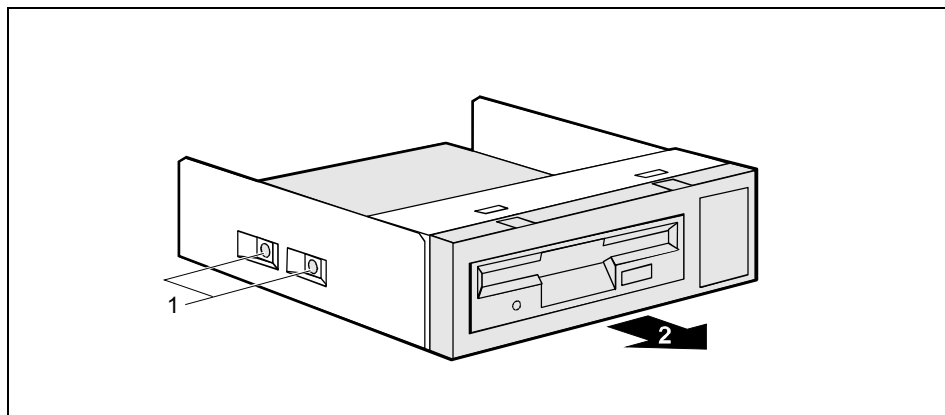
Removing the floppy disk drive



- ▶ Press the EasyChange rails in the direction of the arrows (1).
- ▶ Pull the floppy disk slide-in module out of the casing (2).



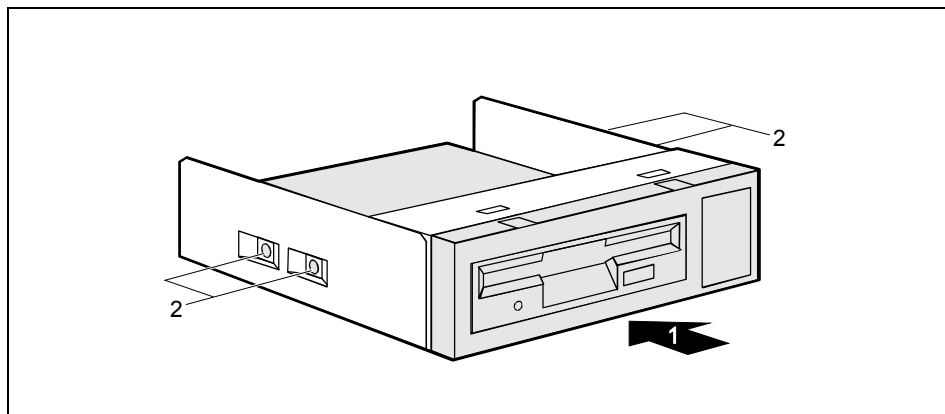
- Pull the EasyChange rails off the floppy disk slide-in module.



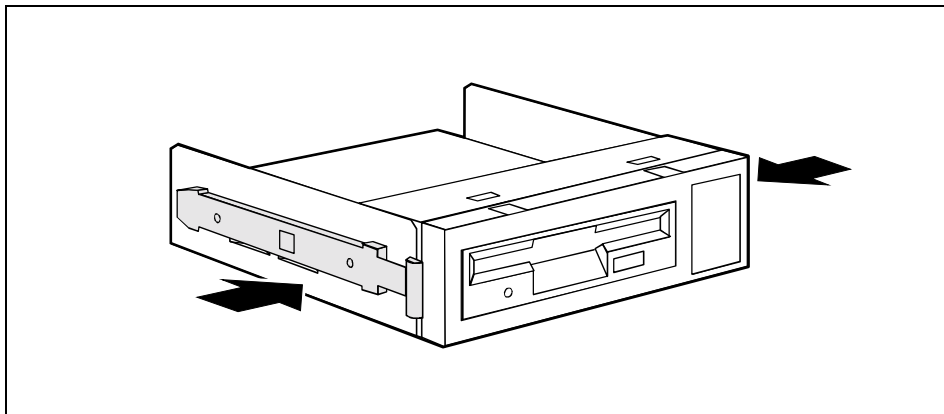
- Remove the screws (1) on both sides of the slide-in module.
- Pull the disk drive out of the slide-in module (2).

Installing the floppy disk drive

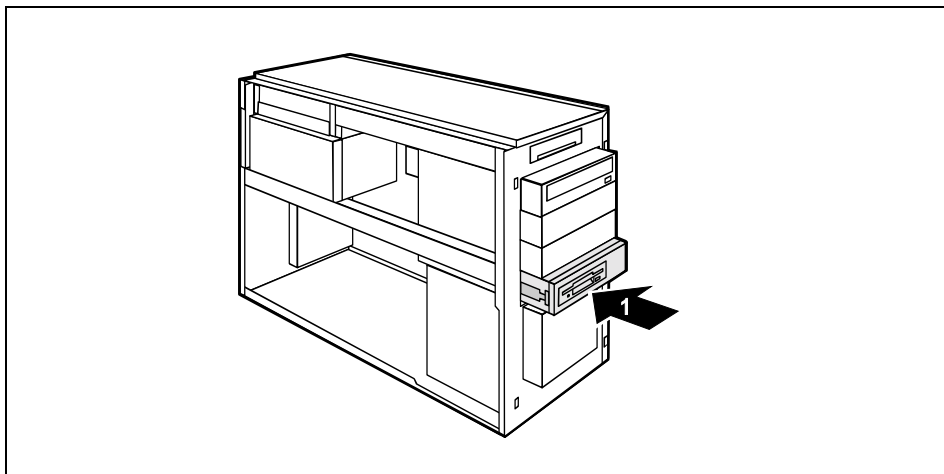
- Take the new floppy disk drive out of its packaging.



- Slide the floppy disk drive into the slide-in module (1).
- Fasten the floppy disk drive with the screws (2) on both sides of the slide-in module.



- Press the EasyChange rails into the provided holes.



- Slide the floppy disk slide-in module into the casing (1) until it engages noticeably.
- Fit the data and power supply connectors to the floppy disk drive.
- If it is present, pull the cable of the front USB or USB-audio interface from the mainboard (see also the technical manual for the mainboard).
- Attach the front panel (see "Attaching the front panel" section).
- Close the casing (see "Closing the casing" section).

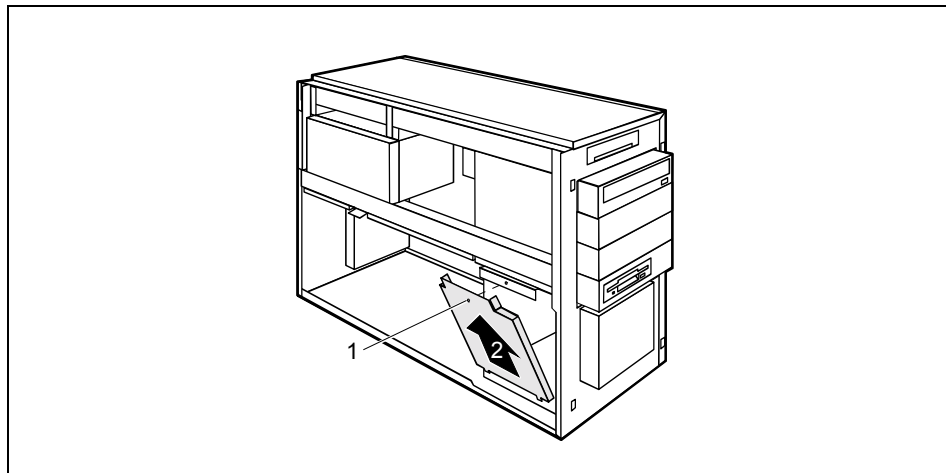


It may be necessary to modify the entry for the drive in the *BIOS Setup*.

Installing or removing the hard disk drive

- Open the casing (see "Opening the casing" section).

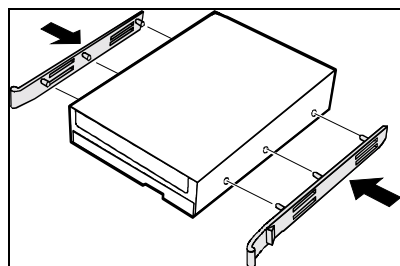
Removing the cover



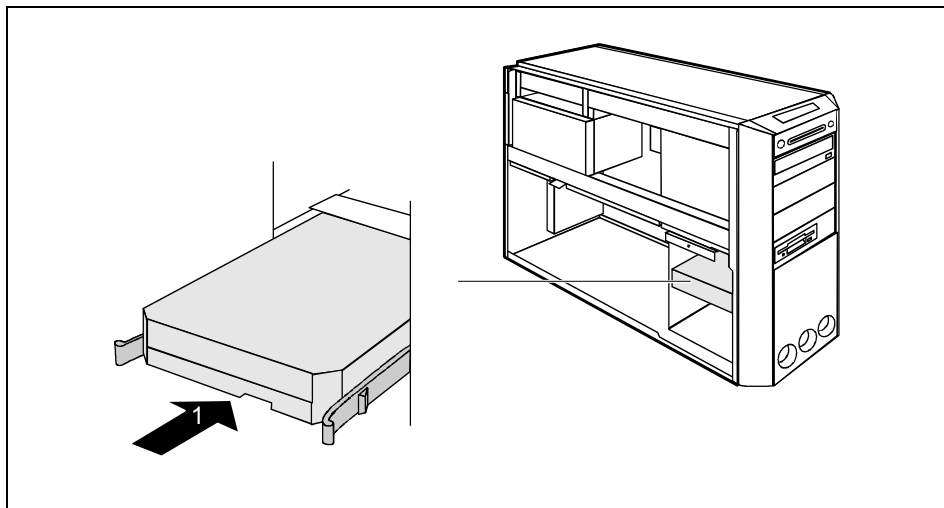
- Loosen the screw (1).
- Fold out the cover (2).

Installing a hard disk drive

- Take the new hard disk drive out of its packaging.
- Make the required settings (e.g. master-slave settings or SCSI-ID) on the drive.



- Secure the EasyChange rails on the side of the hard disk by inserting the upper pins of the EasyChange rail in the corresponding holes of the hard disk.



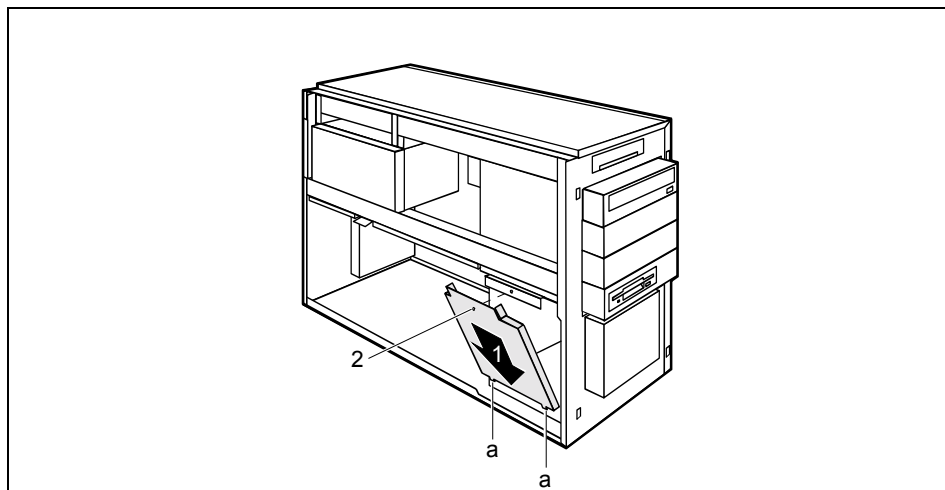
- ▶ Push the hard disk drive into the casing (1) until the EasyChange rails engage.
- ▶ Connect the data and power supply cables to the hard disk drive or to the hard disk drives.



Connect the blue plug of the data cable to the connection on the mainboard. Connect the plug on the other end to the hard disk drive.

For SCSI drives, connect the hard disk ports to the plug of the controller or of the mainboard.

Installing the cover plate



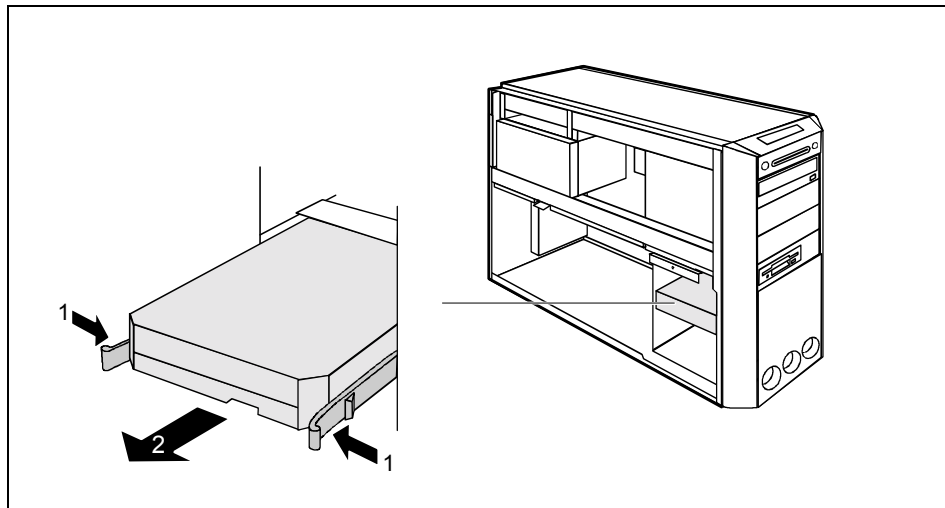
- ▶ Set the cover plate into the casing such that the projections (a) engage into the appropriate recesses (1).
- ▶ Close the cover. Ensure that the power supply and data cables are not pinched. Fasten the cover with the screw (2).
- ▶ Close the casing (see "Closing the casing" section).



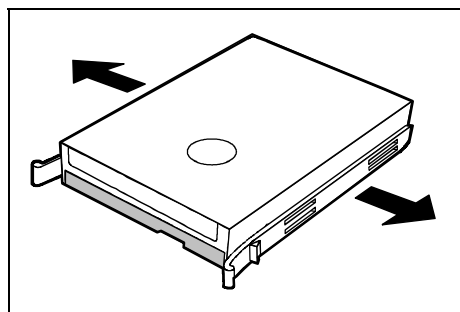
It may be necessary to modify the entry for the drive in the *BIOS Setup*.

Removing a hard disk drive

- ▶ Open the casing (see "Opening the casing" section).
- ▶ Remove the cover (see "Removing the cover" section).
- ▶ Disconnect all cables connected to the drive (data cable, power supply cable).



- ▶ Press the EasyChange rails in the direction of the arrows (1).
- ▶ Pull the hard disk drive out of the carrier (2).



- ▶ Pull the EasyChange rails off the hard disk drive.
- ▶ If necessary, make the required settings on the remaining hard disk drive.

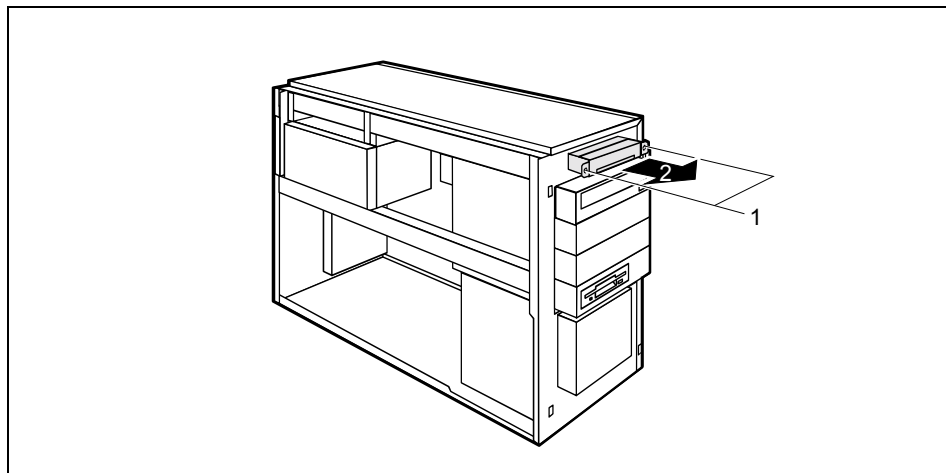
- ▶ Close the casing (see "Closing the casing" section).
- ▶ Install the cover plate (see "Installing the cover plate" section).



It may be necessary to modify the entry for the drive in the *BIOS Setup*.

Replacing the SmartCard reader

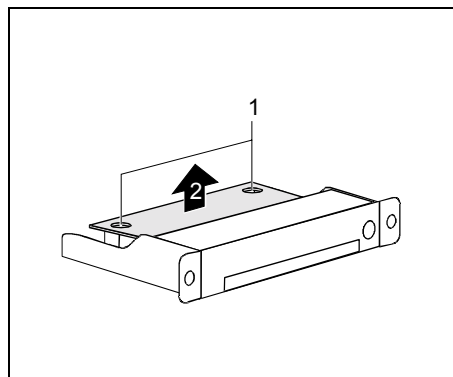
Removing a SmartCard reader



- ▶ Open the casing (see "Opening the casing" section).
- ▶ Remove the front (see "Removing the front panel" section).
- ▶ Disconnect the plug of the SmartCard data cable from the mainboard (see also the technical manual for the mainboard).
- ▶ Loosen the screws (1).
- ▶ Pull the SmartCard reader, together with its mounting, out of the casing (2).

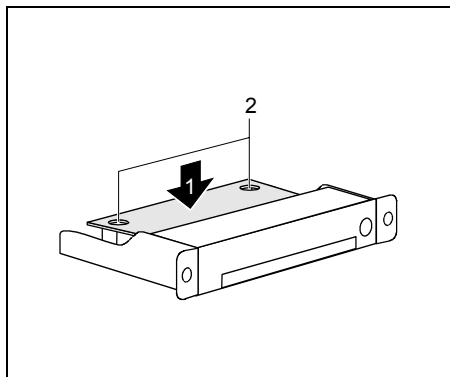


If you remove the upper accessible drive first, you will find it easier to remove the SmartCard reader together with its mounting.

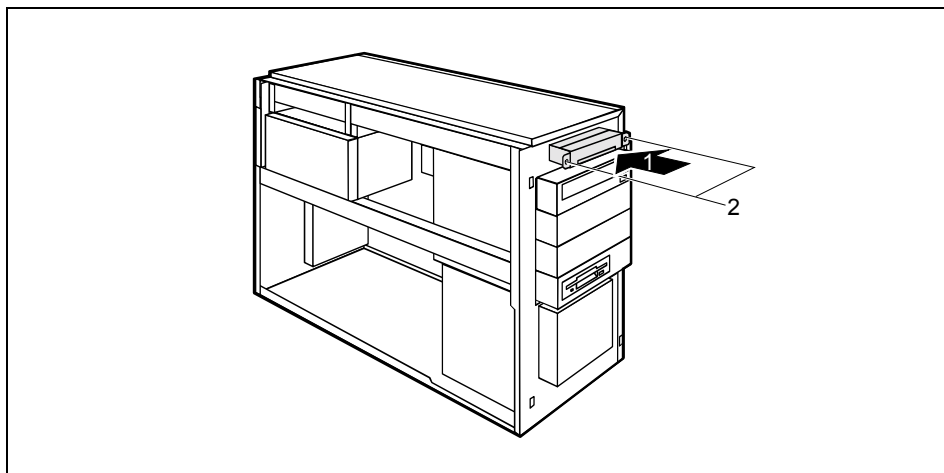


- ▶ Remove the data cable from the SmartCard reader.
- ▶ Undo the screws (1) and pull the SmartCard reader out of the carrier (2).

Installing a SmartCard reader



- ▶ Slide the SmartCard reader into the supplied mounting (1) with the component side upwards and fix it in place with the screws (2).
- ▶ Connect the data cable to the SmartCard reader.



- ▶ Place the carrier on the guide clips in the casing.
- ▶ Slide the carrier in the direction of the arrow as far as it will go (1).
- ▶ Fasten the mounting to the casing with the screws (2).
- ▶ Connect the plug of the SmartCard data cable to the mainboard (see the technical manual for the mainboard).
- ▶ Attach the front panel (see "Attaching the front panel" section).
- ▶ Close the casing (see "Closing the casing" section).

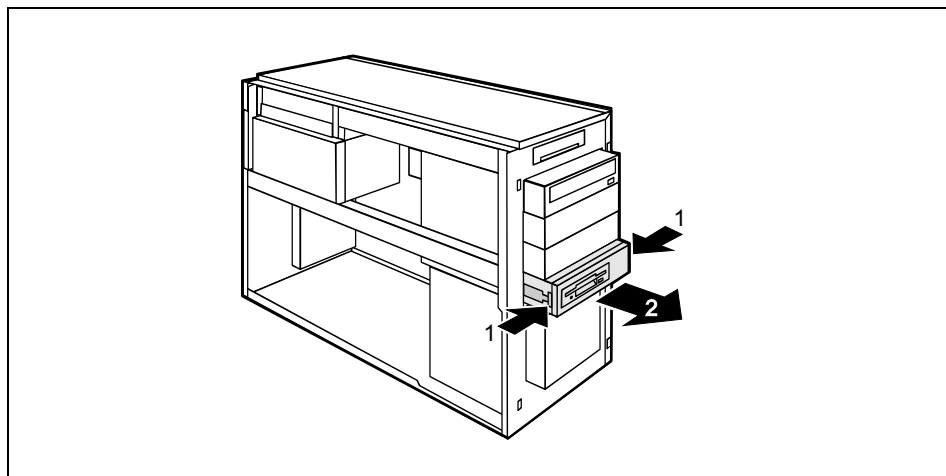
Installing and removing front USB or USB audio ports

You can install the following variants in the recess next to the floppy disk drive:

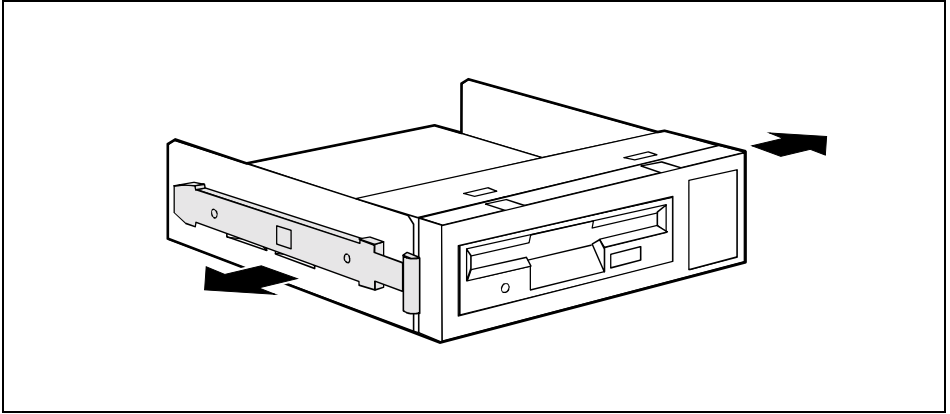
- two USB ports
- a USB port combined with two audio ports
- two USB interfaces combined with two audio ports

Each of the audio ports have the connections Headphone OUT and Microphone IN.

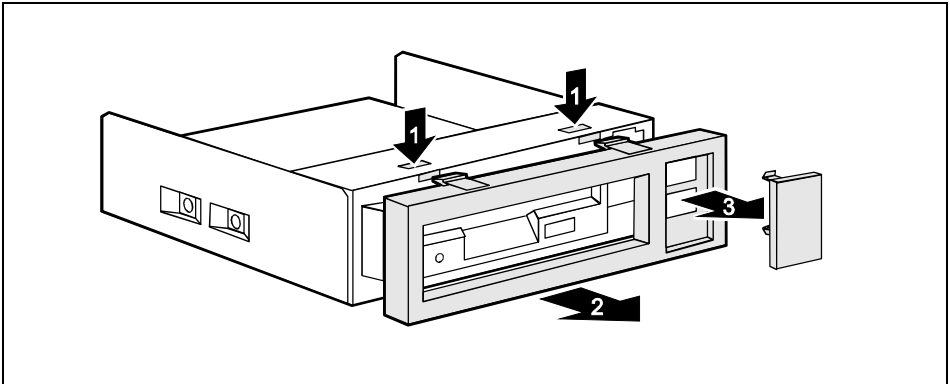
- ▶ Open the casing (see "Opening the casing" section).
- ▶ Remove the front (see "Removing the front panel" section).
- ▶ Pull the cables from the floppy disk drive.



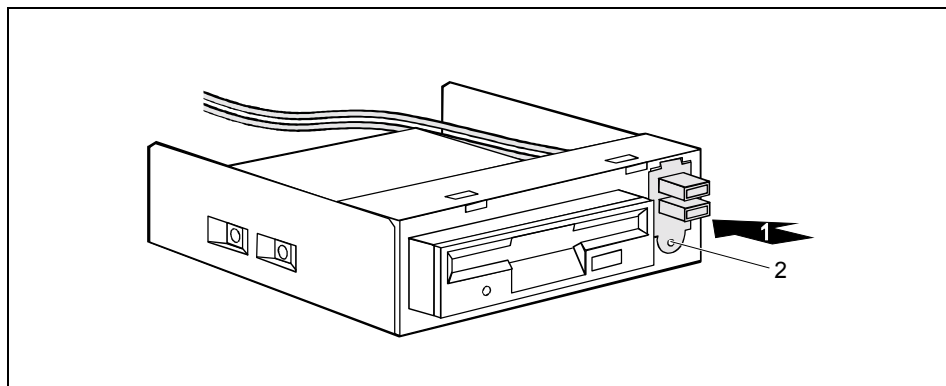
- ▶ Press the EasyChange rails in the direction of the arrows (1).
- ▶ Pull the floppy disk slide-in module out of the casing (2).



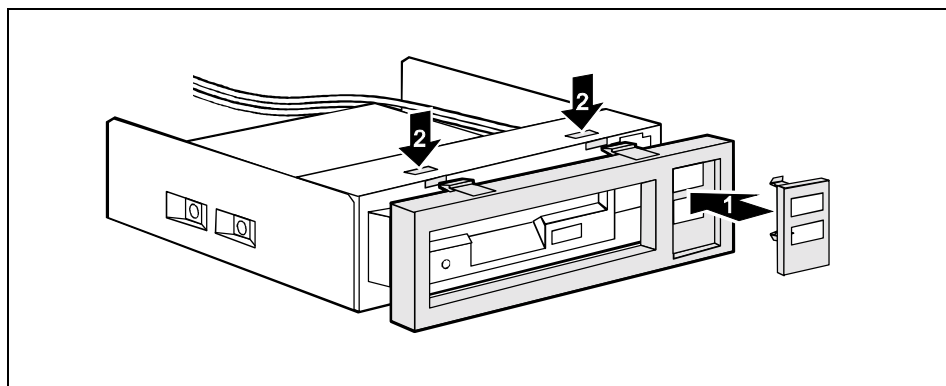
- Pull the EasyChange rails off the floppy disk slide-in module.



- Detach the locking mechanisms (1) and remove the front bezel of the floppy disk slide-in module (2).
- Remove the blind cover from the bezel of the floppy disk slide-in module (3).



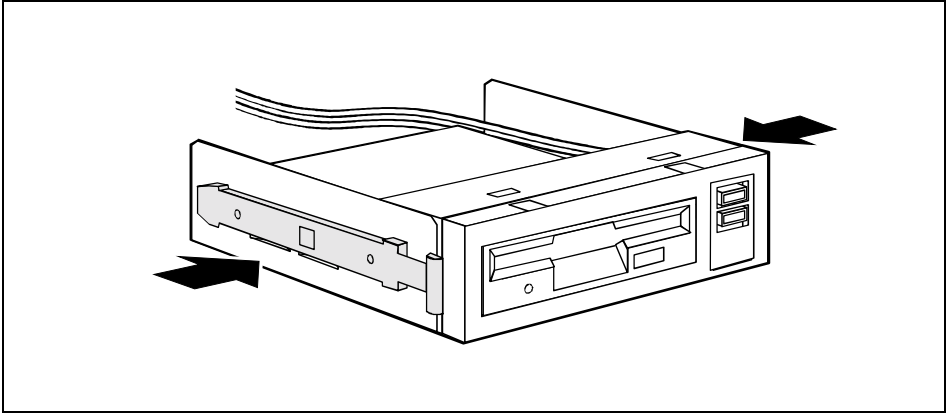
- ▶ Slide the USB or USB-audio interface through the hole provided (1). First slide the tongue into the upper opening.
- ▶ Fasten the USB or USB audio ports with the screw (2).



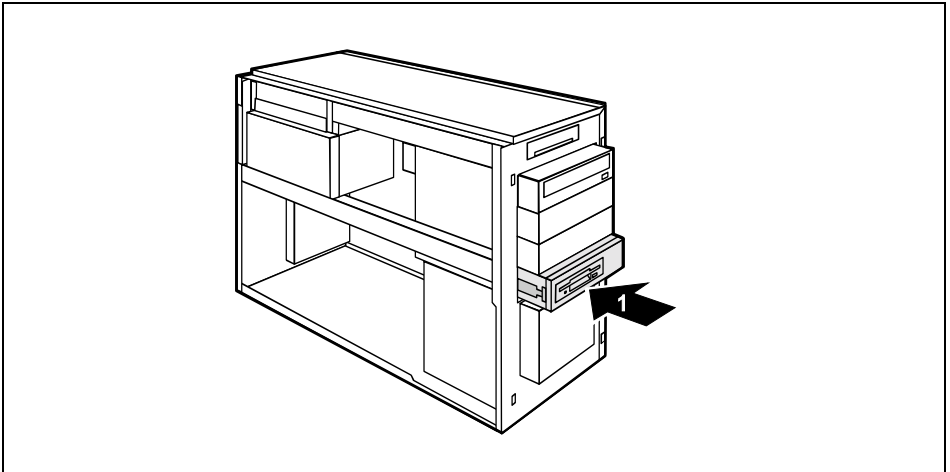
- ▶ Insert the appropriate interface frame into the slide-in module bezel (1).
- ▶ First attach the bezel at the bottom and then push the upper tongues into place until they engage (2).



The USB interface and the USB-audio interface each have a separate interface frame.



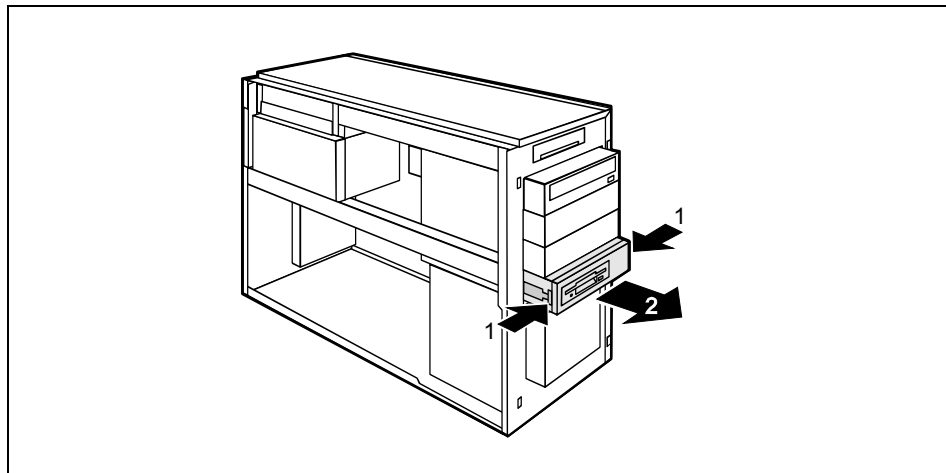
- ▶ Press the EasyChange rails into the provided holes.



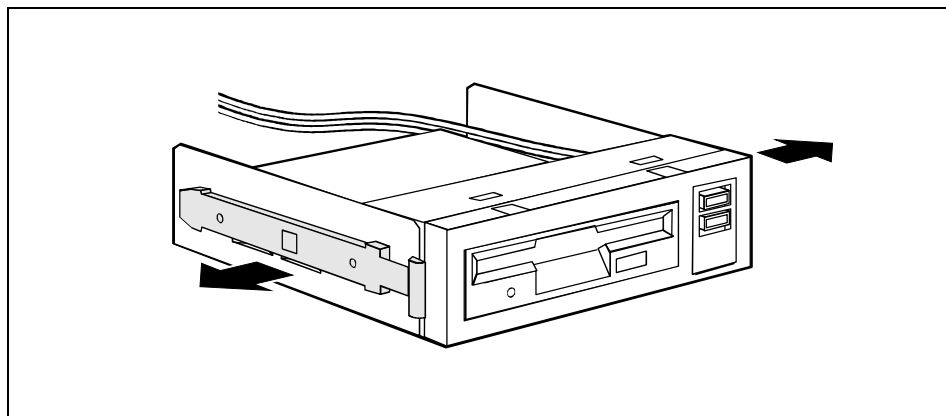
- ▶ Slide the floppy disk slide-in module into the casing (1) until it engages noticeably. Fit the data and power supply connectors to the floppy disk drive.
- ▶ Connect the USB cable and, if necessary, the audio cable to the corresponding connector on the mainboard (see also the technical manual for the mainboard).
- ▶ Attach the front panel (see "Attaching the front panel" section).
- ▶ Close the casing (see "Closing the casing" section).

Removing front USB or USB audio ports

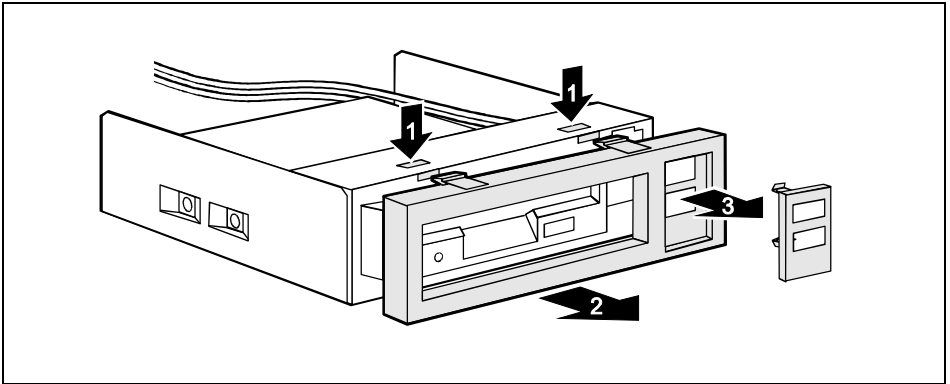
- ▶ Open the casing (see "Opening the casing" section).
- ▶ Remove the front (see "Removing the front panel" section).
- ▶ Detach the USB data cable and, if present, the audio data cable from the mainboard (see the technical manual for the mainboard).
- ▶ Pull the cables from the floppy disk drive.



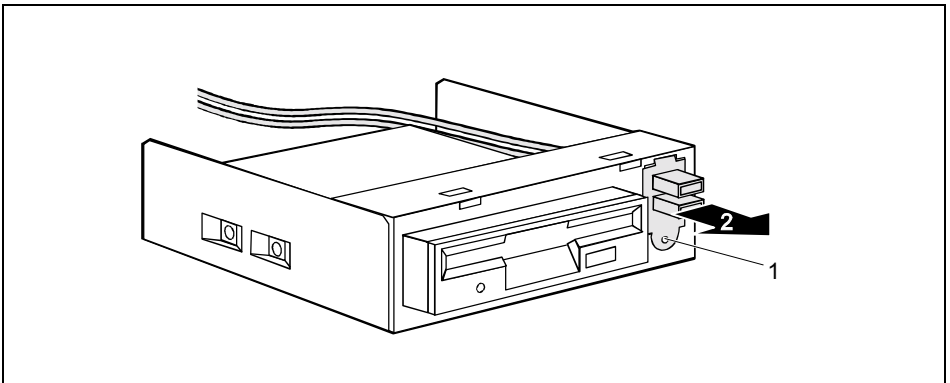
- ▶ Press the EasyChange rails in the direction of the arrows (1).
- ▶ Pull the floppy disk slide-in module out of the casing (2).



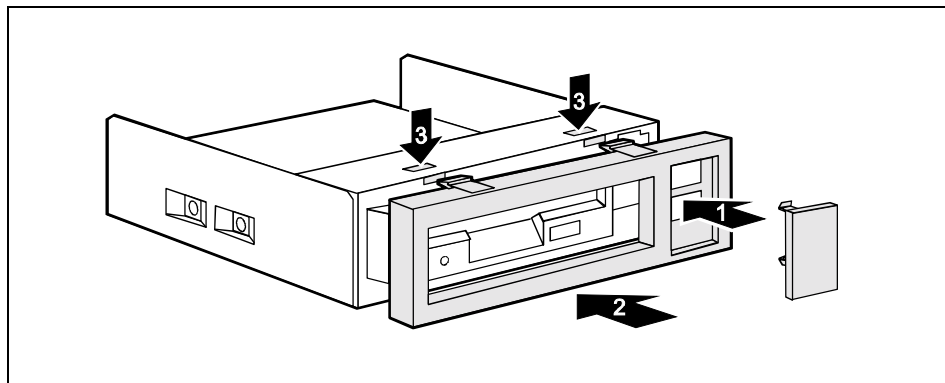
- ▶ Pull the EasyChange rails off the floppy disk slide-in module.



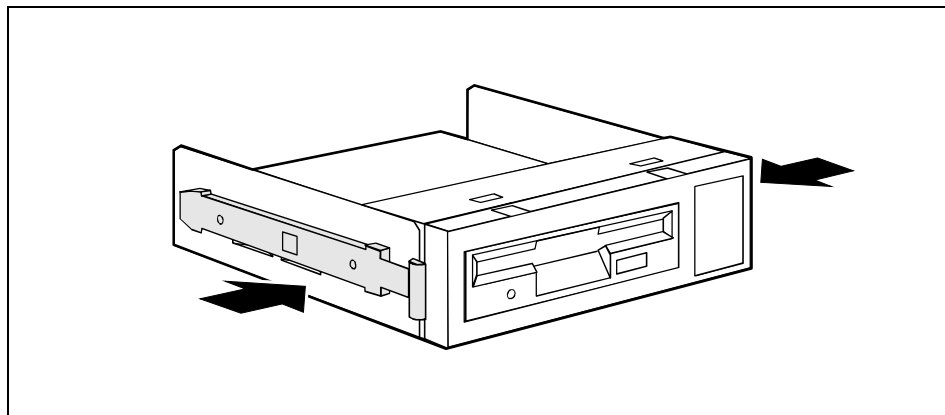
- ▶ Detach the locking mechanisms (1) and remove the bezel of the floppy disk slide-in module (2).
- ▶ Remove the interface frame (3) from the bezel of the floppy disk slide-in module.



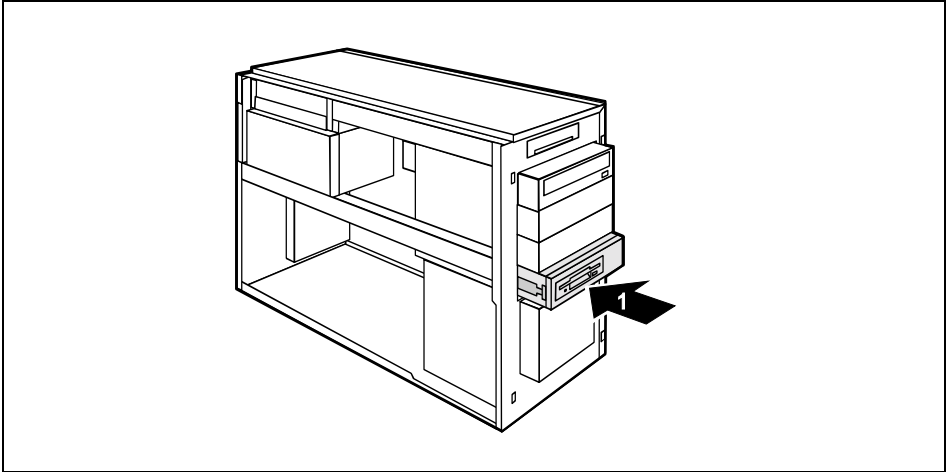
- ▶ Remove the screw (1) and then remove the USB or USB-audio interface (2).



- ▶ Insert the blanking plate into the slide-in module bezel (1).
- ▶ Place the cover on the floppy disk slide-in module again (2).
- ▶ First attach the bezel at the bottom and then push the upper tongues into place until they engage (3).



- ▶ Press the EasyChange rails into the provided holes.



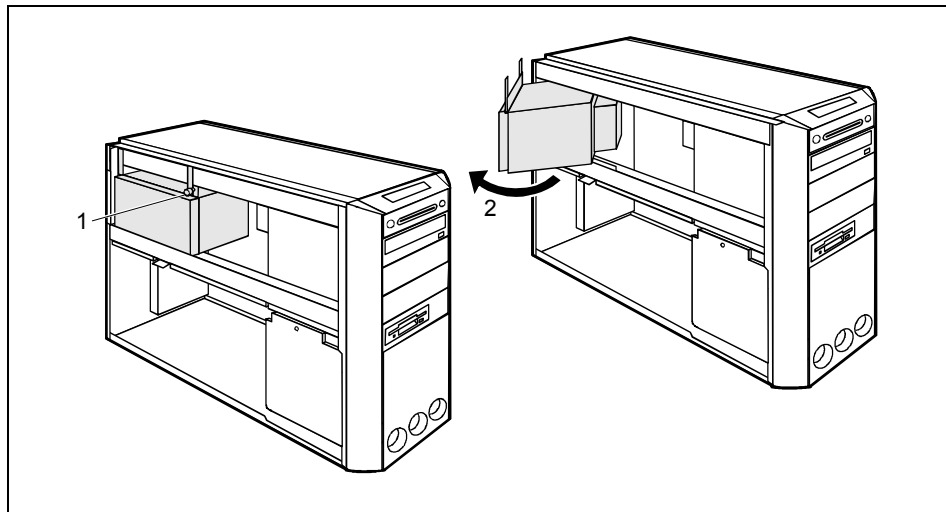
- ▶ Slide the floppy disk slide-in module into the casing (1) until it engages noticeably.
- ▶ Fit the data and power supply connectors to the floppy disk drive.
- ▶ Attach the front panel (see "Attaching the front panel" section).
- ▶ Close the casing (see "Closing the casing" section).

Extensions to the mainboard

Details on whether you can upgrade the main memory or the processor are provided in the technical manual for the mainboard. In order to upgrade or replace the processor, you must first remove the ventilation cover.

- Open the casing (see "Opening the casing" section).

Removing the power supply



For workstations with a ventilation plate only:

- Remove the ventilation plate (see "Removing the ventilation plate").
- Unscrew the screw with which the power supply is secured in the casing (1).
- Swing the power supply out of the casing (2).



Only connect the power plug after you have reinstalled the power supply and closed the unit.

Upgrading main memory

For workstations with a fan only:

- ▶ Remove the fan (see "Remove the fan").
- ▶ Upgrade the memory according to the description in the technical manual for the mainboard.

For workstations with a fan only:

- ▶ Install the fan (see "Installing the fan").

Replacing processor

- ▶ Upgrade the processor according to the description in the technical manual for the mainboard.

Replacing lithium battery

In order to permanently save the system information, a lithium battery is installed to provide the CMOS-memory with a current. A corresponding error message notifies the user when the charge is too low or the battery is empty. The lithium battery must then be replaced.



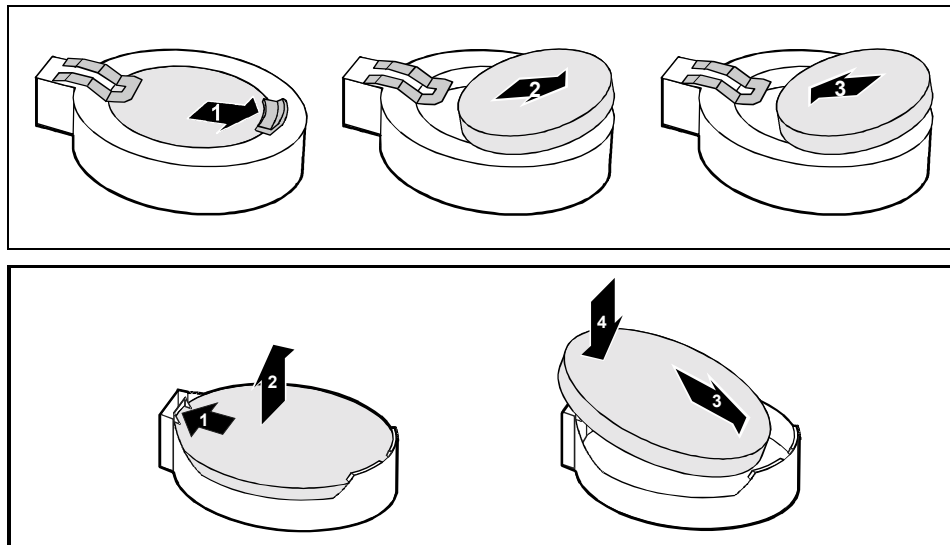
Incorrect replacement of the lithium battery may lead to a risk of explosion!

The lithium battery may be replaced only with an identical battery or with a type recommended by the manufacturer.

Do not throw lithium batteries into the household waste. They must be disposed of in accordance with local regulations concerning special waste.

Make sure that you insert the battery the right way round. The plus pole must be on the top!

The lithium battery holder exists in different designs that function in the same way.



- ▶ Press the locking lug in the direction of the arrow; the battery jumps somewhat out of the holder (1).
- ▶ Remove the battery (2).
- ▶ Push the new lithium battery of the identical type into the holder (3) and press it downward until it engages (4).

Swinging the power supply in

For workstations with a ventilation plate only:

- ▶ Install the ventilation plate (see "Installing the ventilation plate").
- ▶ Swing the power supply into the casing until it meets the stop.
- ▶ Fasten the power supply in the casing with the screw.
- ▶ Close the casing (see "Closing the casing" section).

Technical data

Electrical data

Regulations complied with:	EN 60950 / VDE 0805 UL 1950 CSA 22.2 No.950
Protection class:	I
Rated voltage range (switchable, power supply 180 W and 200 W)	100 V -127 V / 200 V - 240 V
Rated voltage range (automatic, power supply 250 and 300 W):	100 V -240 V
Frequency:	50 Hz - 60 Hz
Max. rated current (Power supply 300W)	
• Workstation with monitor socket:	100 V -127 V / 7.0 A
• Monitor socket (output):	100 V -127 V / 3.0 A 200 V -240 V / 1.5 A

Dimensions

Width/depth/height:	205 mm/504 mm/385 mm
---------------------	----------------------

Weight

with the basic configuration	approx. 15 kg
------------------------------	---------------

Environmental conditions

Environment class (3K2)	DIN IEC 721 part 3-3
Environment class (2K2)	DIN IEC 721 part 3-2
Temperature:	
• Operating (3K2)	15 °C 35 °C
• Transport (2K2)	-25 °C 60 °C

Condensation in operating must be avoided.

Clearance required to ensure adequate ventilation:	
• left/right/above	min. 200 mm
• front	min. 200 mm
• rear	min. 200 mm



The data sheet of the workstation contains further technical data. You will find the data sheet on the internet at <http://www.fujitsu-siemens.com/>

Index

3 1/2-inch drive 44
5 1/4-inch drive 44

A

Access permission, SmartCard 27
Alt Gr key 23
Anti-theft protection 26
Audio input 16
Audio output 16

B

Battery 69
 disposal 3
BIOS Setup 25
 security functions 27
 system settings 25
Board 33
 installing 39
 removing 39, 41
Button
 ON/OFF switch 22

C

Cable
 connecting 15
 disconnecting 15
Casing
 closing 35
 lead-sealing 26
 locking 25, 35
 locking mechanically 25
 opening 34
 unlocking 25, 34
Casing lock 25
CD drivers & utilities 3
CD-ROM
 indicator 21
CD-ROM drive
 installing 44, 45, 46
 removing 49
CE certificate 4
Chain 26
Class B Compliance Statement 4
Configuration, BIOS Setup 25
Contents of delivery 7
Control key 23
Courier 2
Ctrl key 23

Ctrl+Alt+Del 23
Cursor keys 22

D

Data protection 25
Date
 not correct 32
Device drivers
 parallel port 17
 serial port 17
 USB 18
Devices
 connecting 15, 17, 18
 ports 16
Disposal 3
Drive 44
 accessible 44
 installing 44, 45, 46
 non-accessible drive 44
 removing 44, 49

E

Electromagnetic compatibility 4
Energy saving 3
Enter key 22
Ergonomics 8
Error
 date 32
 floppy disk 31
 mouse 31
 screen 30
 time 32
 workstation 29
Error message 32
ESD 33
Extensions
 mainboard 68
 workstation 33
External devices
 connecting 15, 17, 18
 ports 16

F

Fan
 installing 36
 removing 36
FCC statement 4

Floppy disk
 cannot read 31
 cannot write 31
 inserting 24
 removing 24
 working with 24
 write-protection 24, 31
 write-protection, disabling 24

Floppy disk drive
 changing 51
 indicator 21
 installing 52, 53
 removing 52

Function keys 22

G

Game port 16

H

Hard disk contents, restoring 32

Hard disk drive
 installing 54
 version A 54, 56
 removing 54
 version A 57
 replacing 54

Headphones, port 16

I

IDE drive 44

Installation
 switching on for the first time 13

Installing
 accessible drive 44, 45
 CD-ROM drive 44
 software 13, 15

Interfaces 16

Italics 2

K

Kensington Lock 26

Key

 Alt Gr 23
 Control key 23
 Ctrl 23
 Ctrl key 23
 Ctrl+Alt+Del 23
 Enter key 22
 Menu key 22
 Num Lock 23
 Return key 22
 Shift 23
 Shift key 23
 Start key 22

Key combination 22, 23

Keyboard 22
 connecting 10
 important keys 22
 port 16

Keyboard port 8, 10

Keypad
 alphanumeric 22

L

LAN port 16

LCD 20

Lead-sealing 26

Line in 16

Line out 16

Lithium battery 68
 replacing 69

Lock 25

Low-profile boards 43
 mounting slot adapter 43
 removing slot adapter 43

M

Main memory 68
 upgrading 69

Main power switch 14

Mainboard, extensions 68

Manuals, further 32

Memory
 insufficient 32
 not enough 32

Menu key 22

Microphone jack 16

Monitor
 cleaning 5
 connecting 8
 remains blank 30
 transporting 4

Monitor port 8

Monitor screen
 no screen display 30

Mouse
 connecting 10
 error 31
 port 16

Mouse pointer 31

Mouse port 8

N

New installation, software 29

New software, installing 29

Notational conventions 2

Note

- boards 33
- CE certificate 4
- important 3
- safety 3

Num Lock key 23

Numeric keypad 22

O

ON/OFF switch 14, 22

Other manuals 32

P

Packing material 7

- unpacking 7

Parallel port 16, 17

- connecting devices 17
- settings 17

Port

- audio input 16
- audio output 16
- game port 16
- headphones 16
- keyboard 16
- LAN 16
- line in 16
- line out 16
- microphone 16
- monitor 16
- mouse 16
- parallel port 16
- printer 16
- PS/2 mouse 16
- SCSI 16
- serial port 16
- USB 16

Power supply, removing 68

Power-on indicator 14

- dark 29
- fails to light 29

Preparing for first use, overview 7

Preparing for use 7

- overview 7

Printer 16

Processor 68

Property protection 25

Protection

- property and data 25

PS/2 mouse

- connecting 10
- port 16

PS/2 mouse port 8, 10

R

Ready-to-operate 14

Recycling 3

Retransportation 4

Return key 22

S

Safety 3

SCSI drive 44

SCSI port 16

Security functions

- BIOS Setup 27
- SmartCard 27
- SmartLock 27

Serial port 16, 17

- connecting devices 17
- port 16
- settings 17

Setup, see BIOS Setup

Shift key 23

Signs and symbols 2

SmartCard reader 58

- installing 58
- operating 28
- removing 58
- removing the carrier 58

Soft power off 19

Software

- installing 13, 15
- new installation 29

Standard keyboard, connecting 10

Start key 22

Streamer

- installing 44, 45, 46
- removing 49

Summer time 32

Swinging the power supply in 70

System expansion 33

System settings, BIOS Setup 25

T

Technical data 71

Time

- not correct 32

Time, daylight savings 32

Tips 29, 32

Transport 4

Trouble

- floppy disk 31
- mouse 31
- screen 30
- workstation 29

Troubleshooting 29

U

USB 8

USB devices

- connecting 18
- software 18

USB keyboard, connecting 10

USB mouse, connecting 10

USB port 10, 18

- connecting devices 18

USB ports

- removing 64

USB, port 16

V

Ventilation area 8

Ventilation plate, installing 38

Ventilation plate, removing 37

Video workstation 8

W

Warm boot 23

Workstation

- anti-theft protection 26
- cabling 15
- cannot boot 29
- checking rated voltage 11
- cleaning 5
- closing 35
- connecting 11
- connecting devices 15
- extensions 33
- indicators 20
- lead-seal 26
- locking 25, 35
- locking mechanically 25
- opening 34
- ports 16
- ready-to-operate 19
- setting up 8
- soft power off 19
- switching off 19
 - devices with main power switch 19
- switching on 13, 19
- transporting 4
- unlocking 25, 34

Write protection, floppy disk 24, 31